

Behandlingsreiser

Notat fra Kunnskapsenteret
Systematisk litteratursøk med
sortering
Desember 2012

Nasjonalt kunnskapssenter for helsetjenesten
Postboks 7004, St. Olavs plass
N-0130 Oslo
(+47) 23 25 50 00
www.kunnskapssenteret.no
Notat: ISBN 978-82-8121-504-7

desember 2012

 kunnskapssenteret

Tittel	Behandlingsreiser – systematisk litteratursøk med sortert referanseliste
English title	Climate therapy – systematic literature search
Institusjon	Nasjonalt kunnskapssenter for helsetjenesten
Ansvarlig	Magne Nylenna, direktør
Forfattere	Gunn Elisabeth Vist, prosjektleder, <i>Kunnskapssenteret</i> Mariann Mathisen, <i>bibliotekar, Kunnskapssenteret</i>
ISBN	978-82-8121-504-7
Notat	Desember – 2012
Prosjektnummer	900
Publikasjonstype	Systematisk litteratursøk med sortering
Antall sider	27 (36 inklusiv vedlegg)
Oppdragsgiver	Sekretariatet for Nasjonalt råd for kvalitet og prioritering i helse og omsorgssektoren
Emneord(MeSH)	Climatotherapy, Travel, Tropical climate, Altitude
Sitering	Vist GE, Mathisen M. Behandlingsreiser – systematisk litteratursøk med sortert referanseliste. Notat 2012. Oslo: Nasjonalt kunnskapssenter for helsetjenesten, 2012.

Nasjonalt kunnskapssenter for helsetjenesten fremskaffer og formidler kunnskap om effekt av metoder, virkemidler og tiltak og om kvalitet innen alle deler av helsetjenesten. Målet er å bidra til gode beslutninger slik at brukerne får best mulig helsetjenester. Kunnskapssenteret er formelt et forvaltningsorgan under Helse- direktoratet, men har ingen myndighetsfunksjoner og kan ikke instrueres i faglige spørsmål.

Kunnskapssenteret vil takke Hilde H Holte, Ingeborg B Lidal, Nanna Kurtze, Yuliya Haugland og Yndis A Staalesen Strumse for å ha bidratt med sin ekspertise i dette prosjektet. Kunnskapssenteret tar det fulle ansvar for synspunktene som er uttrykt i dette notatet.

Nasjonalt kunnskapssenter for helsetjenesten

Oslo, desember 2012

Hovedfunn

Nasjonalt kunnskapssenter for helsetjenesten fikk i oppdrag av Sekretariatet for Nasjonalt råd for kvalitet og prioritering i helse- og omsorgssektoren å utføre et systematisk litteratursøk med påfølgende sortering. Oppdraget var å finne randomiserte kontrollerte studier som har vurdert effekt av behandlingsreiser. Både reiser til varmere klima og reiser til høyfjell var relevante. Søket ble utført uten begrensninger på alder eller diagnose.

Metode

Vi utarbeidet søkestrategi for et systematisk litteratursøk om effekt av behandlingsreiser. Det ble søkt i databasene Embase og Medline Ovid, PubMed, Cochrane Library, ISI Web of Science og CRD (DARE og HTA) etter randomiserte kontrollerte studier og systematiske oversikter. Søket ble utført i oktober 2012. Begge prosjektmedarbeiderne gikk uavhengig av hverandre gjennom identifiserte publikasjoner/referanser og vurderte relevans i forhold til inklusjonskriteriene.

Resultater

Vi identifiserte totalt 2899 referanser. Av disse ble 69 vurdert som mulig relevante og disse artiklene ble innhentet og lest i fulltekst. 17 randomiserte kontrollerte studier ble inkludert og omfatter følgende diagnosegrupper:

- Revmatologi
- Fibromyalgi
- Nevrologi
- Hudsykdommer
- Lunge- og luftveissykdommer

Følgende sammenligninger ble inkludert:

- Behandlingsreise til varmere klima versus reise uten behandling
- Behandlingsreise til høyfjellet versus reise uten behandling
- Behandlingsreise til varmere klima versus samme behandling uten reise
- Behandlingsreise til varmere klima versus vanlig behandling hjemme eller ingen tiltak

Tittel:

Behandlingsreiser - systematisk litteratursøk med sortering

Publikasjonstype:

Systematisk litteratursøk med sortering

Systematisk litteratursøk med sortering er resultatet av å

- søke etter relevant litteratur ifølge en søkestrategi og
- eventuelt sortere denne litteraturen i grupper presentert med referanser og vanligvis sammendrag

Svarer ikke på alt:

- Ingen kritisk vurdering av studienes kvalitet
- Ingen analyse eller sammenfatning av studiene
- Ingen anbefalinger

Hvem står bak denne publikasjonen?

Kunnskapssenteret har gjennomført oppdraget etter forespørsel fra Nasjonalt råd for kvalitet og prioritering

Når ble litteratursøket utført?

Søk etter studier ble avsluttet Oktober 2012.

Key messages

The Norwegian Knowledge Center was commissioned by the The Secretariat to the National Council for Priority Setting in Health Care to perform a systematic literature search. The aim was to identify randomized controlled trials examining the effect of climate therapy. We were to include travel to warmer climate as well as travel to altitude; we included people of all ages and diagnoses.

Methods

We developed and performed systematic searches in the databases Embase and Medline Ovid, PubMed, Cochrane Library, ISI and CRD (DARE and HTA) for randomized controlled trials and systematic reviews. The search was performed in October 2012. Both authors screened the identified references for relevance in accordance with the inclusion criteria.

Results

We identified 2899 unique references. From these, 69 were considered potentially relevant and read in full text. 17 randomized controlled trials were included, they involve the following diagnoses:

- Rheumatology
- Fibromyalgia
- Neuromuscular diseases
- Dermatological diseases
- Respiratory diseases

The following comparisons were included:

- Travel to warm climate with treatment compared to travel to warm climate without treatment
- Travel to altitude with treatment compared to travel to altitude without treatment
- Travel to warm climate with treatment compared to treatment without travel
- Travel to warm climate with treatment compared to treatment as usual or no intervention

Title:

Climate therapy- systematic literature search

Type of publication:

Systematic reference list

A systematic reference list is the result of a search for relevant literature according to a specific search strategy. The references resulting from the search are then grouped and presented with their abstracts.

Doesn't answer everything:

- No critical evaluation of study quality
- No analysis or synthesis of the studies
- No recommendations

Publisher:

Norwegian Knowledge Centre for the Health Services

Updated:

Last search for studies: October 2012.

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Forord

Nasjonalt kunnskapssenter for helsetjenesten fikk i oppdrag fra Sekretariatet for Nasjonalt råd for kvalitet og prioritering i helse- og omsorgstjenesten å gi en oppdatert oversikt over tilgjengelige randomiserte kontrollerte forsøk om effekt av behandlingsreiser. Både reiser til varmere klima og reiser til høyfjell var relevante. Vi søkte uten begrensninger på alder eller diagnose hos pasientene.

Dette systematiske litteratursøket med sortering skal bidra i saksdokumentet til Nasjonal råd.

Prosjektgruppen har bestått av:

- Gunn Elisabeth Vist, prosjektleder, Kunnskapssenteret
- Mariann Mathisen, bibliotekar, Kunnskapssenteret

Gro Jamtvedt
Avdelingsdirektør

Gunn Elisabeth Vist
Seksjonsleder

Gunn Elisabeth Vist
Prosjektleder

Innledning

Styrker og svakheter ved litteratursøk med sortering

Ved systematisk litteratursøk med sortering gjennomfører vi systematiske litteratursøk i sentrale databaser med mål om å finne all nasjonal og internasjonal forskning som er publisert for en gitt problemstilling. I dette tilfellet har vi også gjennomgått søkeresultatet og sortert ut ikke-relevante artikler. Dette ble først gjort basert på tittel og eventuelt sammendrag av den enkelte referanse, og de som virket potensielt relevante, ble lest i fulltekst. Vi leste også referanselistene i de inkluderte studiene og referanselistene i relevante oversiktsartikler. Men vi kan allikevel ha gått glipp av potensielt relevante studier. Andre måter å identifisere studier på, som kontakt med eksperter på fagfeltet er kun i liten grad utført i dette oppdraget. Vi gjennomførte ingen kvalitetsvurdering av artiklene.

Dersom vi skulle ha utført en systematisk oversikt, ville vi ha kvalitetsvurdert de inkluderte studiene, presentert resultatene og vurdert dem for sammenstilling i meta-analyser samt at vi ville ha vurdert kvaliteten på dokumentasjonen.

Vi har søkt i elektroniske databaser, men ikke etter upublisert litteratur. Søket ble utført for hele tidsperioden databasene dekker bakover i tid. Vi har søkt etter randomiserte kontrollerte studier og systematiske oversikter.

Problemstilling

Hensikten med denne oversikten er å gi en oversikt over tilgjengelige randomiserte kontrollerte forsøk som finnes om effekten av behandlingsreiser. Både reiser til varmere klima og reiser til høyfjell var relevante. Vi søkte uten begrensninger på alder eller diagnose hos pasienten.

Hva er effekten av behandlingsreise sammenlignet med ingen reise eller sammenlignet med reise uten behandling, og er det forskjellig effekt ved forskjellig lengde på oppholdet?

I Norge tilbys behandlingsreiser til varmere klima som supplement til tradisjonell behandling for pasienter som har diagnoser som man mener har fordel av behandling i varmt og solfylt klima. Behandlingsreiser er ofte av tre eller fire ukers varighet og må inkludere organisert trening, behandling og medisinskfaglig oppfølging. Mange av reisene går til Tyrkia og Kanariøyene. Det er et begrenset antall pasientgrupper (diagnosegrupper) som omfattes av tilbudet. Flere ønsker å bli inkludert. I dag gis tilbudet til personer med revmatiske/inflammatoriske leddsykdommer, voksne med psoriasis og postpoliosyndrom, barn med lungesykdommer og/eller atopisk eksem.

For å få behandlingsreisen dekket av det offentlige, er det et krav om dokumentert effekt av klimareise for pasienter med den aktuelle diagnosen (NOU 2000:2). Dermed blir det viktig å få oversikt over hvilke pasientgrupper denne dokumentasjonen er tilgjengelig for.

SINTEF publiserte i 2011 en rapport med tittel 'Evaluering av ordningen med behandlingsreiser til utlandet' (Kurtze N, Lippestad JW, Hem KG. Evaluering av ordningen med behandlingsreiser til utlandet. SINTEF 2011-11-01). Sekretariatet for Nasjonalt råd for kvalitet og prioritering ønsket opprinnelig en oppdatering av denne med tanke på nye tilgjengelige randomiserte kontrollerte studier publisert etter søket i SINTEF- rapporten. Søketermer og søkeord er presentert i SINTEF- rapporten, men fullstendig søkestrategi har det dessverre ikke vært mulig å få tilgang til (personlig kommunikasjon med Dr. Kurtze). Derfor har vi utviklet vår egen søkestrategi. I tillegg til at dette notatet har et nyere (mer oppdatert) søk, så har vi (i samsvar med vår bestilling) kun inkludert randomiserte kontrollerte studier. Lesere av begge publikasjoner vil legge merke til at SINTEF- rapporten inkluderer flere studiedesign, og hadde begrensninger på hvilke diagnoser de skulle inkludere.

Metode

Litteratursøking

Vi søkte systematisk etter litteratur i følgende databaser:

- Cochrane Database of Systematic Reviews
- CRD (DARE og HTA)
- Embase Ovid
- Medline Ovid
- ISI Web of Science
- PubMed (artikler som er Ahead of print).

Forskningsbibliotekar Mariann Mathisen planla og utførte samtlige søk. Søk etter studier ble avsluttet oktober 2012. Den fullstendige søkestrategien er vist i vedlegg 1.

Inklusjonskriterier

Vi inkluderte randomiserte kontrollerte studier

Populasjon: Alle pasienter med tilstand der behandling i varmere klima blir ansett som fordelaktig (slik som for eksempel revmatiske/inflammatoriske sykdommer, psoriasis, postpoliosyndrom, astma og kroniske lungesykdommer eller atopisk eksem).

Alle pasienter med tilstand der behandling ved høyfjellsopp-
hold blir ansett som fordelaktig (slik som for eksempel astma
og kroniske lungesykdommer)

Tiltak: Behandlingsreiser til varmere strøk
Behandlingsreiser til høyfjellet

Sammenlikning: Reise uten behandling
Behandling uten reise
Ingen reise

Behandlingsreise av forskjellig varighet ble inkludert

Utfall: Ikke presisert

Språk: Ingen begrensninger i søket. Studier på engelsk, norsk, svensk og dansk ville bli inkludert, studier på andre språk ble vurdert oversatt eller presentert i egen tabell.

Artikkelutvelging

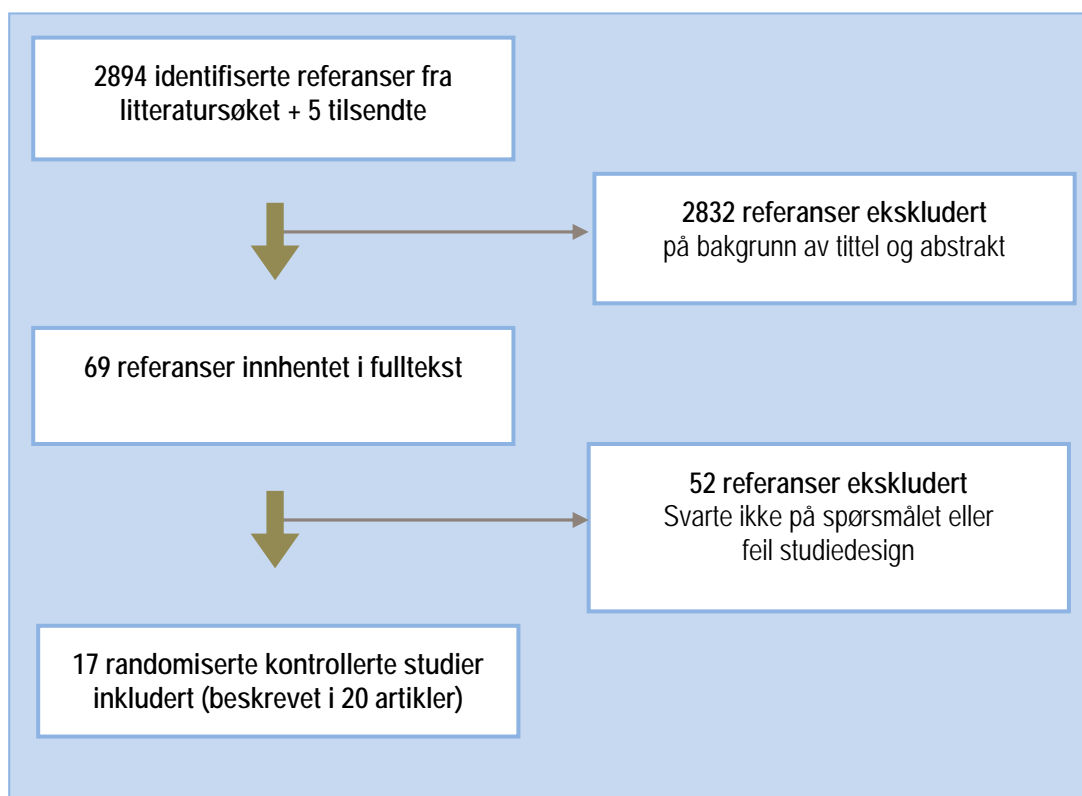
Prosjektmedarbeiderne gikk gjennom alle titler og sammendrag for å vurdere relevans i henhold til inklusjonskriteriene. Vurderingene ble utført av begge uavhengig av hverandre og sammenlignet i etterkant. Der det var uenighet om vurderingene, ble inklusjon eller eksklusjon avgjort ved konsensus.

Utvelging av litteratur ble gjort basert på inklusjonskriteriene.

Resultat

Resultat av søk

Søket ble utført i oktober 2012 og resulterte i 2894 unike referanser. Flytskjema for søkeresultater, referanseinnhenting og håndtering av referansene er vist i figur 1.



Figur 1. Flytskjema over identifisert litteratur

Håndtering av innhentet litteratur

Av de 2894 identifiserte referansene og de fem tilsendte, vurderte vi 69 som mulig relevante og bestilte disse i fulltekst. Flere av referansene vi innhentet var systematiske oversikter, disse hentet vi med hensikt for å se om de inkluderte randomiserte kontrollerte studier som oppfylte våre inklusjonskriterier. Vi fant imidlertid ingen randomiserte kontrollerte studier i disse oversiktene som oppfylte våre inklusjonskriterier og som vi ikke hadde identifisert i vårt eget søk.

Mange av de innhentede referansene var ikke randomiserte kontrollerte studier.

Åtte av studiene omfattet ikke reise som krysset klimasone. For eksempel var det flere studier der pasienter reiste fra ett område i Israel til den israelske dødehavskysten, og disse pasientene har vi vurdert at befinner seg i middelhavsklima både før, under og etter reisen. Klimaendringen ville være fundamentalt forskjellig ved en reise fra Norge til middelhavsområdet, derfor har vi ikke funnet studiene relevante for dette oppdraget, og vi har ekskludert dem. De ekskluderte referansene er listet i tabell i vedlegg 2 sammen med hovedgrunn for eksklusjon.

De 17 inkluderte randomiserte kontrollerte studiene (som er beskrevet i 20 artikler) er sortert nedenfor.

Vi minner om at vi kun har sortert studiene, vi har ikke kvalitetsvurdert studiene eller sett på retningen av resultatene.

Resultat av sorteringen

De relevante referansene ble først sortert i kategorier ut fra populasjon eller diagnosegruppe og vist i tabell 1.

Deretter sorterte vi studiene etter intervensjon eller sammenligning.

Så presenterer vi referansene (med abstraktet) alfabetisk etter førsteforfatter. Vi oppgir forfattere, tittel på publikasjonen, publikasjonssted og sammendrag av artikkelen slik de fremkom i de elektroniske databasene.

Til sist presenterer vi en tabell som viser fordelingen av studier inkludert i dette notatet med systematiske søk med sortering sammenlignet med studiene inkludert i SINTEF- rapporten og med forklaringer på forskjellene.

Tabell 1: Randomiserte kontrollerte studier sortert etter diagnosegruppe

Pasientgruppe	Antall randomiserte kontrollerte studier
Revmatologiske diagnoser	4 RCTer (5 artikler)
Bjerkhoel FJ og Førre Ø med flere 1993. Evaluering av utenlandsbehandlingen for revmatikere. Upublisert rapport 1993.	
Johansson M, Sullivan L. Medical treatment abroad. Therapeutic results of treatment abroad for certain types of rheumatic illness (Swedish). Spri Rapport 1974;No. 19 , 1974.	
Johansson M, Sullivan L. Influence of treatment and change of climate in women with rheumatoid arthritis. A controlled prospective study of psychological, medical and social effects. Scand J Rheumatol 1974;4(9 sup.)	
Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Rosland M, Winther A, Pajunen PA, et al. The efficacy of rehabilitation for patients with rheumatoid arthritis: comparison between a 4-week rehabilitation programme in a warm and cold climate. Scand J Rheumatol 2009;38(1):28-37.	
Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Roisland M, Winther A, Pajunen PA, et al. Efficacy of rehabilitation for patients with ankylosing spondylitis: comparison of a four-week rehabilitation programme in a Mediterranean and a Norwegian setting. J Rehabil Med 2011;43(6):534-42.	
Fibromyalgi	2 RCTer (3 artikler)
Clarke-Jenssen AC, Forseth KØ, Mengshoel AM, Staalesen Strumse Y, Bråten T. Effekt av behandlingsopphold i varmt kontra kalt klima for pasienter med fibromyalgi. Oslo Universitetssykehus, Seksjon for behandlingsreiser til utlandet; masteroppgave innlevert november 2012. (foreløpig upublisert).	
Zijlstra TR, Braakman-Jansen LMA, Taal E, Rasker JJ, van de Laar MAFJ. Cost-effectiveness of Spa treatment for fibromyalgia: general health improvement is not for free. Rheumatology (Oxford) 2007;46(9):1454-9.	
Zijlstra TR, van de Laar MAFJ, Bernelot Moens HJ, Taal E, Zakraoui L, Rasker JJ. Spa treatment for primary fibromyalgia syndrome: a combination of thalassotherapy, exercise and patient education improves symptoms and quality of life. Rheumatology (Oxford) 2005;44(4):539-46.	
Nevrologiske diagnoser	5 RCTer (6 artikler)
Dahl A, Skjeldal OH, Simensen A, Dalen HE, Brathen T, Ahlvin P, et al. [Treatment of patients with neuromuscular disease in a warm climate]. Tidsskr Nor Laegeforen 2004;124(13-14):1795-8.	
Nordby PA, Staalesen Strumse YA, Frosli KF, Stanghelle JK. Patients with neuromuscular diseases benefit from treatment in a warm climate. J Rehabil Med 2007;39(7):554-9.	
Skjeldal OH, Dahl A, Diseth TH. Evaluering av behandlingsreiser til syden for barn og voksne med Cerebral parese. Rikshospitalet 2004.	
Strumse YA, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. [Treatment of patients with postpolio syndrome in warm climate]. Tidsskr Nor Laegeforen 2001;121(17):2003-7.	
Strumse YAS, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. Treatment of patients with postpolio syndrome in a warm climate. Disabil Rehabil 2003;25(2):77-84.	
Smedal T, Myhr KM, Aarseth JH, Gjelsvik B, Beiske AG, Glad SB, et al. The influence of warm versus cold climate on the effect of physiotherapy in multiple sclerosis. Acta Neurol Scand 2011;124(1):45-52.	

Snellman E, Aromaa A, Jansen CT, Lauharanta J, Reunanen A, Jyrkinen-Pakkasvirta T, et al. Supervised four-week heliotherapy alleviates the long-term course of psoriasis. *Acta Derm Venereol* 1993;73(5):388-92.

Byremo G, Rod G, Carlsen KH. Effect of climatic change in children with atopic eczema. *Allergy* 2006;61(12):1403-10.

Katkhanova OA, Sakhnov SN. [Natural physical factors of the Kuban' Black Sea coastal area in the rehabilitative treatment of children with psoriasis and concomitant ophthalmoherpes]. *Vopr Kurortol Fizioter Lech Fiz Kult* 2009;(2):36-8.

Schallreuter KU, Moore J, Behrens-Williams S, Panske A, Harari M. Rapid initiation of repigmentation in vitiligo with Dead Sea climatotherapy in combination with pseudocatalase (PC-KUS). *Int J Dermatol* 2002;41(8):482-7.

Gaisberger M, Sanovic R, Dobias H, Kolarz P, Moder A, Thalhamer J, et al. Effects of ionized waterfall aerosol on pediatric allergic asthma. *J Asthma* 2012;49(8):830-8.

Haugen TS, Stavem K. Rehabilitation in a warm versus a colder climate in chronic obstructive pulmonary disease: a randomized study. *J Mol Signal* 2007;27(1):50-6.

Nedenfor er studiene sortert etter hvilken sammenligning som er vurdert. Vi har presentert dem i tabeller etter følgende sammenligninger:

- **behandlingsreise til varmere klima sammenlignet med reise til varmere klima uten behandling**
- **behandlingsreise til kaldere klima/høyfjellet sammenlignet med reise til kaldere klima/høyfjellet uten behandling**
- **behandlingsreise til varmere klima sammenlignet med samme behandling uten reise**
- **behandlingsreise til varmere klima sammenlignet med ingen tiltak eller vanlig behandling**

Tabell 2a viser behandlingsreise til varmere klima sammenlignet med reise til varmere klima uten behandling

Referanse	Pasienter	Behandlingsreise til varmere klima	Sammenlignet med reise til varmere klima uten behandling
Schallreuter med flere 2002	Pasienter med vitiligo (en hudsykdom)	39 personer reiste fra England eller Tyskland til Dødehavet for 3 uker, badet i 15 min to ganger daglig, smurte seg med behandlingskrem og solte seg	20 personer reiste fra England eller Tyskland til Dødehavet for 3 uker. 10 personer badet i 15 min to ganger daglig og solte seg. 10 personer badet i 15 min to ganger daglig, smurte seg med en placebokrem og solte seg

Tabell 2b viser behandlingsreise til kaldere klima/høyfjellet sammenlignet med reise til kaldere klima/høyfjellet uten behandling

Referanse	Pasienter	Behandlingsreise til kaldere klima/høyfjellet	Sammenlignet med reise til kaldere klima/ høyfjellet uten behandling
Gaisberger med flere 2012	Barn (8 til 15 år) med allergi og astma	27 barn reiste fra Østerrike eller Bosnia/Herzegovina til Krimml Waterfalls i Østerrike for 3 uker ved 1067 moh. Barna tilbrakte 1 time om dagen ved fossen – i aerosol sonen	27 barn reiste fra Østerrike eller Bosnia/Herzegovina til Krimml Waterfalls i Østerrike for 3 uker ved 1067 moh. Barna var ved samme høyde uten aerosoleksponering

Tabell 2c viser behandlingsreise sammenlignet med samme behandling uten reise

Referanse	Pasienter	Behandlingsreise til varmere klima	Sammenlignet med samme behandling uten reise
Clarke-Jenssen med flere 2012.	Pasienter med fibromyalgi	44 personer reiste fra Norge til Tyrkia for 4 uker med daglige gåturer, aerobic trening i basseng eller gym-sal, avspenning 2 ganger i uka og gruppesamtaler	44 personer ble i Norge og fikk samme behandling
Dahl med flere 2004	47 barn og 40 voksne pasienter med nevrologiske diagnoser	Pasientene reiste fra Norge til Lanzarote for tilpasset program med to til fire treningsøkter av 30 til 45 min per dag. Trening og opplæring av tilpassede fysiske ferdigheter, læring av mestingsstrategier, sykdomsforståelse og inspirasjon til videre aktivitet i hjemmemiljøet	Pasientene fikk samme behandling på Beitostølen i Norge
Haugen og Stavem 2007	Pasienter med kronisk obstruktiv lungesykdom (KOLS)	60 personer reiste fra Norge til Gran Canaria for 4 uker med 7,5 times rehab 5 dager i uka med sykdomsundervisning og optimering av medikamentbehandling, psykososial behandling og veiledet fysisk aktivitet	36 personer ble i Norge og fikk samme behandling
Johansson og Sullivan 1974 og Johansson og Sullivan 1974b	Kvinner med revmatologisk artritt	45 kvinner reiste fra Sverige til Fuengirola i Spania for 6 uker med fysioterapi og arbeidsterapi både individuelt og i grupper samt oppmuntring til egentrening	41 kvinner fikk lignende behandling i Göteborg, Sverige
Smedal med flere 2011	Pasienter med MS (multipel sklerose) med bevegelsesproblemer	30 personer reiste fra Norge til Tenerife for 4 uker med fysioterapi i 1 time per dag fem dager i uka	30 personer ble i Norge og fikk samme behandling
Staalesen Strumse med flere 2009	Pasienter med revmatoid artritt	72 personer reiste fra Norge til et middelhavsland for 4 uker med individuell fysioterapi med aktivitet, gruppetrening, passiv terapi, avslapping og undervisning	52 personer ble i Norge og fikk samme behandling
Staalesen Strumse med flere 2011	Pasienter med ankyloserende spondylitt (Bekhterev's sykdom)	65 personer reiste fra Norge til et middelhavsland for 4 uker med individuell fysioterapi med aktivitet, gruppetrening, passiv terapi, avslapping og undervisning	42 personer ble i Norge og fikk samme behandling
Strumse med flere 2001 og Strumse med flere 2003	Pasienter med postpoliosyndrom	30 personer reiste fra Norge til Tenerife for 4 uker med kombinert gruppe- og individuell terapi + personlig tilpasset treningsopplegg	29 personer ble i Norge og fikk samme behandling

Tabell 2d viser behandlingsreise til varmere klima sammenlignet med ingen tiltak eller vanlig behandling

Referanse	Pasienter	Behandlingsreise til varmere klima	Sammenlignet med ingen reise
Bjerkhoel med flere 1993.	Voksne pasienter med leddgikt eller bechterew	56 personer reiste fra Norge til Igalo i tidligere Jugoslavia for 4 uker med trening 5 dager i uka	62 voksne ble i Norge og fikk behandling som vanlig
Byremo med flere 2006	Barn (4 til 13 år) med atopisk eksem	30 barn reiste fra Norge til Gran Canaria for 4 uker med 1 time gym 5 dager i uka, 1 til 2 timer bading, soling (30 min første dag økende til 4 timer daglig), og undervisning om sykdom og behandling	26 barn ble i Norge, de fikk 2 timer undervisning om sykdom og behandling
Clarke-Jenssen med flere 2012.	Pasienter med fibromyalgi	44 personer reiste fra Norge til Tyrkia for 4 uker med daglige gåturer, aerobic trening i basseng eller gymsal, avspenning 2 ganger i uka og gruppesamtaler	44 personer ble i Norge, fikk ingen intervensjon og fungerte som kontrollgruppe
Katkhanova og Sakhnov 2009	Barn (7 til 13 år) med psoriasis og herpes som nylig er operert	278 barn reiste fra Russland til den russiske dødehavskysten hvor de fikk personlig og sesongjusterte doser med soling, bading og varmluft	278 barn ble på hjemstedene sine og fikk behandling som vanlig
Nordby med flere 2007	Pasienter med neurologiske diagnoser	30 personer reiste fra Norge til Spania (Costa Blanca) for 4 uker rehabilitering med daglig svømming, gruppetrening og individuell fysioterapi	30 personer ventet i 1 år før de fikk behandlingsreise. I denne perioden er de kontrollgruppe
Skjeldal med flere 2004	Pasienter med cerebral parese	29 personer reiste fra Norge til Lanzarote for 4 uker med to treningsøkter hver dag hvor en i basseng	30 personer ble i Norge og fikk behandling som vanlig
Snellman med flere 1993	Pasienter med psoriasis	53 personer reiste fra Finland til Kanariøyene for 4 uker med veiledet soling, fysisk trening og rådgivning/veiledning	53 personer ventet 1 år før de fikk behandlingsreise. I denne perioden er de kontrollgruppe
Strumse med flere 2001 og Strumse med flere 2003	Pasienter med postpoliosyndrom	30 personer reiste fra Norge til Tenerife for 4 uker med kombinert gruppe- og individuell terapi + personlig tilpasset treningsopplegg	29 personer ble i Norge og fikk behandling som vanlig
Zijlstra med flere 2005, Zijlstra med flere 2007	134 pasienter med fibromyalgi	58 personer reiste fra Holland til Tunisia for 2½ uke. Pasientene fikk talassoterapi, veiledet fysisk aktivitet og gruppeundervisning	76 deltakere ble i Holland og fikk behandling som vanlig

De inkluderte referansene i alfabetisk rekkefølge

Bjerkhoel FJ og Førre Ø med flere 1993. Evaluering av utenlandsbehandlingen for revmatikere. Upublisert rapport 1993. Oversendt til Kunnskapssenteret fra Seksjon for behandlingsreiser til utlandet i desember 2012.

Byremo G, Rod G, Carlsen KH. Effect of climatic change in children with atopic eczema. Allergy 2006;61(12):1403-10.

Abstract: BACKGROUND: Climate and sunlight (ultraviolet radiation) influence activity of atopic eczema. OBJECTIVE: To evaluate the effect of moving from a subarctic/temperate climate to a sunny subtropical climate on children's atopic eczema. METHODS: Children, 4-13 years, with severe atopic eczema were randomized to stay 4 weeks in Gran Canary (index patients = 30) and home in Norway (controls = 26), with a follow up of 3 months. SCORing of Atopic Dermatitis (SCORAD) was primary variable, and secondary were Children's Dermatology Life Quality Index (CDLQI), Staphylococcus aureus skin colonization and pharmacological skin treatment. RESULTS: SCORing of Atopic Dermatitis decreased from 37.2 (29.4-44.9) to 12.2 (9.0-15.4) [mean (95% confidence intervals)] after 4 weeks and 21.2 (17.2-25.1) 3 months thereafter in index patients ($P < 0.0005$), much less in controls. Children's Dermatology Life Quality Index in the index group improved from 8.7 to 2.2 and 4.5 after 4 weeks and 3 months ($P < 0.0005$), not in controls. Bacterial skin colonization with *S. aureus* decreased in the index group from 23/30 (77%) to 12/30 (40%; $P = 0.001$) and 12/30 (40%; $P = 0.005$) after 1 month and 3 months, and the use of local steroids decreased in index patients but not in controls. CONCLUSIONS: The change from a subarctic/temperate to a subtropical climate for 4 weeks improved significantly skin symptoms (SCORAD) and quality of life, even for 3 months after return

Clarke-Jenssen AC, Forseth KØ, Mengshoel AM, Staalesen Strumse YA, Bråten T. Effekt av behandlingsopphold i varmt kontra kalt klima for pasienter med fibromyalgi. Oslo Universitetssykehus, Seksjon for behandlingsreiser til utlandet; masteroppgave innlevert november 2012. oversendt til Kunnskapssenteret fra Seksjon for behandlingsreiser til utlandet i desember 2012.

Dahl A, Skjeldal OH, Simensen A, Dalen HE, Brathen T, Ahlvin P, et al. [Treatment of patients with neuromuscular disease in a warm climate]. Tidsskr Nor Laegeforen 2004;124(13-14):1795-8.

Abstract: BACKGROUND: Several patient groups request treatment in a warm climate, in spite of the fact that the effects of such treatment are undocumented. MATERIAL AND METHODS: 47 children and 40 adults with neuromuscular diseases were recruited, stratified according to sex, use or non-use of electric wheelchair, primary myopathy or hereditary neuropathy, and randomised into two adult and two children groups. The patients were treated in a rehabilitation centre, either on Lanzarote or in Norway. All patients were monitored with physical tests and questionnaires at the start of the study, at the end of the treatment period, after three months (all groups) and after six months (adults only). RESULTS: No significant differences in effect between the groups were found. In the warm climate, the adult patient group showed a statistically significant improvement regarding pain, quality of life, depression, and results of physical tests at the end of treatment. After three months, the improvement in physical tests was still present. Among adult patients treated in Norway, improvement in physical tests was statistically significant after three months, but not at the end of the treatment period. INTERPRETATION: This study did not show a statistically significant difference between patients with various neuromuscular diseases treated in a warm climate compared to similar patients treated in Norway

Gaisberger M, Sanovic R, Dobias H, Kolarz P, Moder A, Thalhamer J, et al. Effects of ionized waterfall aerosol on pediatric allergic asthma. J Asthma 2012;49(8):830-8.

Abstract: Objective. Ionized water aerosols have been suggested to exert beneficial health effects on pediatric allergic asthma. Their effect was evaluated in a randomized controlled

clinical trial as part of a summer asthma camp. **Methods.** Asthmatic allergic children (n = 54) spent 3 weeks in an alpine asthma camp; half of the group was exposed to water aerosol of an alpine waterfall for 1 hour per day, whereas the other half spent the same time at a "control site". Immunological analysis, lung function testing, and fractional exhaled nitric oxide (FeNO) testing were performed during the stay, and sustaining effects were evaluated 2 months later. Symptom score testing was done over a period of 140 days. **Results.** The water aerosol group showed a significant improvement in all lung function parameters, whereas only the peak expiratory flow improved in the control group. All patients showed a significant improvement in symptom score and a significant decrease in FeNO after the camp. Only the water aerosol group exhibited a long-lasting effect on asthma symptoms, lung function, and inflammation in the follow-up examination. Induction of interleukin (IL)-10 and regulatory T (Treg) cells was measured in both groups, with a pronounced increase in the water aerosol group. IL-13 was significantly decreased in both groups, whereas IL-5 and eosinophil cationic protein were decreased only in the water aerosol group. **Conclusions.** Our findings confirm the induction of Treg cells and reduction in inflammation by climate therapy. They indicate a synergistic effect of water aerosols resulting in a long-lasting beneficial effect on asthma symptoms, lung function, and airway inflammation. Martin Gaisberger and Renata Sanovic as well as Markus Ritter and Arnulf Hartl contributed equally to this work

Haugen TS, Stavem K. Rehabilitation in a warm versus a colder climate in chronic obstructive pulmonary disease: a randomized study. J Mol Signal 2007;27(1):50-6.

Abstract: **PURPOSE:** The primary aim of this study was to evaluate if pulmonary rehabilitation in a subtropical climate during winter had better long-term effects on health-related quality of life and symptoms of anxiety and depression than an equivalent pulmonary rehabilitation program in a colder climate. The secondary aim was to assess short-term differences in the same outcomes. **METHODS:** Referred patients with chronic obstructive pulmonary disease were randomized to and completed rehabilitation in a subtropical climate in Spain (n=60) or in a temperate climate in Norway (n=36). Health-related quality of life was assessed with St. George's Respiratory Questionnaire, and symptoms of anxiety and depression were assessed with the Hospital Anxiety and Depression Scale at the start of rehabilitation, at discharge, and 8 months later. **RESULTS:** There were no significant differences between the 2 groups in mean changes in St George's Respiratory Questionnaire dimensions or total score (-3.0; 97.5% confidence interval [CI], -8.6 to 2.6, P = .22) or Hospital Anxiety and Depression Scale anxiety (-1.2; 97.5% CI, -2.7 to 0.3, P = .08) or depression (-0.3; 97.5% CI, -1.7 to 1.1, P = .62) score from the start of rehabilitation to 9 months thereafter. During rehabilitation, the Spain group improved more than the Norway group in the activity score of the St George's Respiratory Questionnaire (-6.2; 97.5% CI, -12.4 to -0.1, P= .02) and in the Hospital Anxiety and Depression Scale anxiety score (-1.7; 97.5% CI, -2.9 to -0.6, P = .001). **CONCLUSIONS:** No significant long-term differences in improvement in health-related quality of life or psychological well-being was demonstrated after chronic obstructive pulmonary disease rehabilitation in a subtropical versus a temperate climate

Johansson M, Sullivan L. Medical treatment abroad. Therapeutic results of treatment abroad for certain types of rheumatic illness (Swedish). Spri Rapport 1974;No. 19 , 1974.

Abstract: Spri considers it important to initiate and support investigations which aim at analysing the various effects of medical treatment etc. Spri's external project 7074 - 'Comparisons between medical care abroad and conventional treatment in Sweden in rheumatoid arthritis - with special reference to medical and psychological effects of therapy' - which is now being reported, should be seen as an effort in that direction. With regard, in the first instance to the methodological aspects and also the reported therapeutic effects, Spri has decided to publish the research project as a Spri Report. The Report presents an account of the design and results to date of a study conducted in Gothenburg between 1970 and 1973. The aim of the study was to investigate the value of treatment abroad in rheumatoid arthritis. The results of a period of stay at the establishment in Spain have been compared to the results of conventional out patient treatment at a Medical Rehabilitation Department in Sweden. The main study was conducted in accordance with a predetermined plan comprising 90 women suffering from rheumatoid arthritis who were as similar as possible in medical respects (prospective crossover design with matched groups). The upper age limit was set at 55

years. The group which received treatment abroad displayed a greater degree of improvement immediately after the treatment period as compared to the group treated in Gothenburg. Upon examination after an interval of four months, however, the differences between the groups were relatively insignificant. By then, the condition of the travellers had, on average, deteriorated while the condition of the control group, in many instances, had improved or remained unchanged during the corresponding period. Those treated abroad, however, had experienced an improvement during a longer period after completion of the treatment than did those who were treated in Gothenburg, particularly during the winter period. As a rule these general results were confirmed statistically after analysis of specific measurements. The comparatively greater variations in the group treated abroad - measured by improvement immediately following treatment and by deterioration at the examination four months later - concerned both objective and subjective changes comprising the activity of the disease, muscle and joint symptoms, motor functions, and to some extent mental balance and subjective general condition. Concerning the extent of the variations, there was a tendency toward more pronounced improvement during treatment abroad than there was deterioration later on. The results indicate that treatment in the south of Spain, under the conditions reported, is valuable for the patient suffering from rheumatoid arthritis, being superior to out patient treatment in Gothenburg as regards immediate therapeutic gains and about equal as regards the condition four months after treatment

Johansson M, Sullivan L. Influence of treatment and change of climate in women with rheumatoid arthritis. A controlled prospective study of psychological, medical and social effects. Scand J Rheumatol 1974;4(9 sup.)

Abstract: The present study has evaluated whether treatment abroad is of value in rheumatoid arthritis, and if so, of how much value, for which patients, and in what way. The results have been defined multifactorially. They indicate that there is an effect directly after treatment abroad which has no real counterpart after outpatient treatment in Sweden. Improvements after treatment abroad have been identified with medical, psychological and social aspects ranked separately. Subjective benefit concerned: state of health, specifically muscle and joint symptoms; functional capacity concerning activities of daily living, specifically locomotive ability; and, general condition as well as emotional balance. There was little or no impact on social activities (leisure, gainful employment) at the four mth control. No systematic changes of personality traits were found. Objectively demonstrable effects concerned: disease activity with emphasis on joint symptoms and medication; functional capacity, specifically range of movement and grip strength; and disease activity. There was little or no influence on consumption of medical care at the four mth control. Thus, the therapeutic benefit of treatment abroad concerned, above all, the basic disease. In addition, clinically nonimproved or less improved patients experienced improvement of disease symptoms, locomotive ability and emotional balance to a somewhat greater extent than corresponding groups after treatment in Sweden. There was both a subjective and objective deterioration at the four mth control. Whether the improvements are to be considered short or long term depends on the availability of adequately controlled investigations of conventional modes of treatment. A psychosomatic complexity in patients' susceptibility to therapy is suggested on the basis of the individual background characteristics that explained a large proportion of the variation in benefit from treatment abroad

Katkhanova OA, Sakhnov SN. [Natural physical factors of the Kuban' Black Sea coastal area in the rehabilitative treatment of children with psoriasis and concomitant ophthalmoherpes]. Vopr Kurortol Fizioter Lech Fiz Kult 2009;(2):36-8.

Abstract: The primary objective of this study was to optimize the process of remedial treatment at health resorts of Sochi, Gelendzhik, and Anapa by introducing sun, air, and sea water baths in the system of sanatorium-and-spa treatment of the children with various nosologic forms of psoriasis and concomitant ophthalmoherpes that necessitated keratoplastic surgery. The study included children at the age of 7-13 years with plaque and nummular psoriasis vulgaris who received rehabilitative treatment after keratoplasty for ophthalmoherpes. The children were randomly allocated to two groups. One comprised patients based at the specialized children's sanatoria "Yunost", "Vulan", and "Bimlyuk" (Roszdav) (group 1, n = 278). Patients of the control group were given conventional treatment in municipal outpatient settings in compliance with the existing standards (group 2, n = 278). The study showed a 2.39-fold decrease of the psoriasis area and severity index (PASI)

in the children of group 1 compared with its 1.38-fold decrease in group 2. It is concluded that a combination of natural physical factors of the Kuban' Black Sea coastal area has highly beneficial effect on the outcome of postoperative treatment of children with plaque and nummular psoriasis vulgaris and concomitant ophthalmoherpes responsible for corneal ulceration that requires corrective keratoplastic surgery

Nordby PA, Staalesen Strumse YA, Frosli KF, Stanghelle JK. Patients with neuromuscular diseases benefit from treatment in a warm climate. J Rehabil Med 2007;39(7):554-9.

Abstract: OBJECTIVE: Several studies have shown positive effects of treatment of chronic diseases in a warm climate. The aim of this study was to evaluate the long-term effect of a 4-week rehabilitation programme in a warm climate for patients with neuromuscular diseases. DESIGN: A randomized controlled trial with a cross-over design. One period of intervention and one period of "life as usual". PATIENTS: A total of 60 persons with a neuromuscular diagnosis. METHODS: Long-term effects were defined as changes in physical and psychological functions persisting after 3 months. Several scales were used according to the World Health Organization's classification of functioning. RESULTS: A comparison of the changes in the 2 periods showed significantly better results for all primary outcome scales in favour of the intervention. Mean difference in changes in pain (VAS scale), 6-min walking test and "timed up and go" were 9.0 (SD 28.8) units, 52 (75) m and 1.0 (2.3) sec, $p = 0.03$, $p < 0.01$ and 0.01 , respectively. Median difference in changes in "Fatigue Severity Scale" and "Life Satisfaction Scale" were 0.4 (-0.5, 1.7) and 0.0 (0.0, 1.0), $p = < 0.01$ and 0.01 , respectively. CONCLUSION: This study shows positive long-term effects on different dimensions of health after a 4-week rehabilitation programme in a warm climate for patients with neuromuscular diseases. This effect might be due to the programme, the warm climate, or a combination of both

Schallreuter KU, Moore J, Behrens-Williams S, Panske A, Harari M. Rapid initiation of repigmentation in vitiligo with Dead Sea climatotherapy in combination with pseudocatalase (PC-KUS). Int J Dermatol 2002;41(8):482-7.

Abstract: BACKGROUND: Low catalase levels and cellular vacuolation in the epidermis of patients with vitiligo support major oxidative stress in this compartment. There is now in vivo evidence for increased epidermal hydrogen peroxide (H_2O_2) accumulation in this patient group by utilizing noninvasive Fourier Transform Raman spectroscopy (FT Raman). Epidermal H_2O_2 can be removed with a topical application of narrow band UVB activated pseudocatalase cream (PC-KUS). (Mn/EDTA-bicarbonate complex, patent No. EPO 58471 1 A), yielding initiation of repigmentation. Dead Sea climatotherapy is another successful treatment modality for vitiligo, but the mode of action has escaped definition so far. METHODS: Epidermal hydrogen peroxide (H_2O_2) was assessed in vivo before and after 21 days treatment at the Dead Sea using noninvasive Fourier-Transform Raman spectroscopy. The effectiveness of repigmentation was followed in 59 patients with vitiligo by comparing Dead Sea climatotherapy alone with the combination of Dead Sea climatotherapy/pseudocatalase cream (PC-KUS) as well as Dead Sea climatotherapy/placebo cream. Clinical repigmentation was documented by standardized black/white photography using non-UV coated bulbs as flashlight and by color photography. RESULTS: This study on 59 patients who had vitiligo for an average time of 17 years (range 3-53 years) confirmed in vivo H_2O_2 accumulation in mM concentrations in the epidermis of untreated patients. Furthermore, we demonstrated a pseudocatalase activity after 15 min of Dead Sea bathing, but the decrease of epidermal H_2O_2 levels was significantly less compared to narrowband UVB activated pseudocatalase cream (PC-KUS). Initiation of repigmentation was already observed between day 10 and day 16 after a combination of Dead Sea climatotherapy/pseudocatalase cream compared to conventional pseudocatalase monotherapy (8-14 weeks) and Dead Sea climatotherapy alone (5-6 weeks). CONCLUSION: The results of this study show a significantly faster initiation of repigmentation in vitiligo after a combination of short-term climatotherapy (21 days) at the Dead Sea in combination with a pseudocatalase cream (PC-KUS) compared to either conventional climatotherapy at the Dead Sea alone or with placebo cream in combination with climatotherapy. This combined therapy is significantly faster in repigmentation than narrowband UVB activated pseudocatalase cream (PC-KUS) treatment alone. The results of this study support the necessity of epidermal H_2O_2 removal as well as the influence of solar UV-light in the successful treatment of vitiligo

Skjeldal OH, Dahl A, Diseth TH. Evaluering av behandlingsreiser til syden for barn og voksne med cerebral parese. Rapport fra Rikshospitalet 2004, Seksjon for behandlingsreiser. Upublisert rapport som ble oversendt til Kunnskapssenteret fra Seksjon for behandlingsreiser i desember 2012.

Smedal T, Myhr KM, Aarseth JH, Gjelsvik B, Beiske AG, Glad SB, et al. The influence of warm versus cold climate on the effect of physiotherapy in multiple sclerosis. *Acta Neurol Scand* 2011;124(1):45-52.

Abstract: OBJECTIVE: To compare the effect of inpatient physiotherapy in a warm versus cold climate in short- and long-term perspectives. METHODS: Sixty multiple sclerosis (MS) patients with gait problems, without heat intolerance, were included in a randomized cross-over study of 4-week inpatient physiotherapy in warm (Spain) and cold (Norway) climate. The primary outcome, 6-min walk test (6MWT), and secondary physical performance and self-reported measures were scored at screening, baseline, after treatment and at 3 and 6 months of follow-up. Treatment effects were analysed by mixed models. RESULTS: After treatment, the mean walking distance had increased by 70 m in Spain and 49 m in Norway ($P = 0.060$). Improvement in favour of warm climate was demonstrated at 6 months of follow-up, 43 m (Spain) compared to 20 m (Norway) ($P = 0.048$). The patients reported less exertion after walking (6MWT) in favour of treatment in Spain at all time points ($P < 0.05$). No significant differences in change were detected for the other physical performance measures. Most self-reported measures showed more improvement after treatment in Spain, but these improvements were not sustained at follow-up. CONCLUSION: The results indicate that MS patients without heat intolerance have additional benefits from physiotherapy in a warm climate. Copyright 2010 John Wiley & Sons A/S

Snellman E, Aromaa A, Jansen CT, Lauharanta J, Reunanen A, Jyrkinen-Pakkasvirta T, et al. Supervised four-week heliotherapy alleviates the long-term course of psoriasis. *Acta Derm Venereol* 1993;73(5):388-92.

Abstract: The long-term effects of psoriasis heliotherapy were studied in a randomized cross-over trial with a 2-year follow-up. We allocated 95 patients randomly to receive a 4-week heliotherapy course, either at the onset or in the middle of the follow-up period. After a highly significant immediate alleviation of psoriasis about 50% of the patients still had a reduction of psoriasis 6 months later and about 25% one year later. A favourable carry-over treatment effect was still observed during the second follow-up year. Taking advantage of the cross-over design, the effect of heliotherapy was calculated to be statistically significant during the first follow-up year, and the apparent long-term alleviation of psoriasis after the heliotherapy was reflected in a significant period effect. The alleviation of psoriasis was accompanied by a significant decrease in the use of antipsoriatic treatments

Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Rosland M, Winther A, Pajunen PA, et al. The efficacy of rehabilitation for patients with rheumatoid arthritis: comparison between a 4-week rehabilitation programme in a warm and cold climate. *Scand J Rheumatol* 2009;38(1):28-37.

Abstract: OBJECTIVES: To investigate the long-term effect (week 16) of a 4-week rehabilitation programme for patients with rheumatoid arthritis (RA) and to compare the effect of this intervention given in a Mediterranean or a Norwegian climate. METHODS: A randomized, controlled, parallel group design, where 124 RA patients applying for rehabilitation were randomized to a rehabilitation programme either in Norway or in a Mediterranean climate. The participants were examined clinically immediately before (week 0) and after (week 4) the rehabilitation period as well as in week 16 and answered a mailed questionnaire in week 28. The 28-Joint Disease Activity Score (DAS28), American College of Rheumatology (ACR) response and physical tests were used to measure clinical response. RESULTS: The baseline DAS28 value 4.45 (1.16) was reduced by -0.95 (1.05) in the Mediterranean climate and the baseline DAS28 value 4.18 (1.17) was reduced by -0.37 (0.92) in the Norwegian climate at week 16 ($p = 0.003$). An ACR20 improvement was achieved in 25% of the patients treated in the Mediterranean climate and in 15% of those treated in the Norwegian climate. Sustained improvement in all ACR core components at week 16 and in patient's assessment of health status at week 28 was found in the patients treated in the Mediterranean climate only. Tests of physical function, the 6-Minute Walk Test (6MWT) and the Timed Up and Go (TUG), showed comparable improvements in patients treated in both climates. CONCLUSIONS: RA

patients showed immediate positive effects with regard to disease activity, physical function, and symptoms during a 4-week rehabilitation programme. The effects on disease activity and symptoms were larger and better maintained at least 3 months after rehabilitation in a warm rather than in a cold climate

Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Roisland M, Winther A, Pajunen PA, et al. Efficacy of rehabilitation for patients with ankylosing spondylitis: comparison of a four-week rehabilitation programme in a Mediterranean and a Norwegian setting. J Rehabil Med 2011;43(6):534-42.

Abstract: OBJECTIVE: To investigate the sustained effect of a rehabilitation programme for patients with ankylosing spondylitis, and to compare the effect of this intervention given in a Mediterranean vs a Norwegian setting. METHODS: A total of 107 patients with ankylosing spondylitis applying for rehabilitation were randomized to a 4-week inpatient rehabilitation programme in a Mediterranean country or in Norway. The participants were evaluated clinically before and after the rehabilitation period (week 0 and 4) and in week 16. The ASAssessments in Ankylosing Spondylitis working group's Improvement Criteria (ASAS-IC), and tests of spinal mobility and physical capacity were used to measure treatment response. RESULTS: An ASAS20 improvement was still present at week 16 in 50% of the patients treated in a Mediterranean and 23% in a Norwegian centre (p [THIN SPACE]=[THIN SPACE]0.006). The tests of spinal mobility, physical capacity, and almost all patient's assessments of health status (ASAS-IC components) were still improved at week 16 after therapy in both climatic settings. While the improvements in physical capacity were comparable, the spinal mobility and ASAS-IC components improved more, and improvements were sustained longer, after rehabilitation in a Mediterranean setting. CONCLUSION: Patients with ankylosing spondylitis benefit from a 4-week rehabilitation programme in Norway, but even more so from a similar programme in a Mediterranean setting

Strumse YA, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. [Treatment of patients with postpolio syndrome in warm climate]. Tidsskr Nor Laegeforen 2001;121(17):2003-7.

Abstract: BACKGROUND: Treatment in a warm climate of various patient groups, including patients with postpolio syndrome, is controversial. MATERIAL AND METHODS: 88 patients with postpolio syndrome (61 women) were recruited, stratified according to sex, age (< 60 years old) and use/non-use of electrical wheelchair, and randomized to three groups. Group 1 ($n = 30$) underwent treatment in a rehabilitation centre in Tenerife for four weeks in November/December 1999. Group 2 ($n = 29$) was treated in two similar centres in Norway for the same period of time, while Group 3 ($n = 29$), the control group, followed their ordinary health care programme. All patients were tested at the start of the study and three and six months later with physical tests and several questionnaire and qualitative interviews. Patients in groups 1 and 2 were also tested after the rehabilitation period. RESULTS: Groups 1 and 2 improved significantly both in physical tests and subjective ratings. The positive effects in group 1 tended to exceed the positive effects in group 2, and the effects lasted longer. Six minutes walking distance in the two groups was 347 metres and 316 metres, respectively before the treatment period, 429 metres and 362 metres immediately after, and 431 metres and 356 metres three months later. Subjective rating of pain (VAS scale) was 42 and 43 respectively before treatment, 17 and 31 immediately after, and 28 and 44 three months later. In the control group, only minor changes were found. INTERPRETATION: The study seems to document a positive effect of treatment of patients with postpolio syndrome in a warm climate

Strumse YAS, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. Treatment of patients with postpolio syndrome in a warm climate. Disabil Rehabil 2003;25(2):77-84.

Abstract: PURPOSE: Treatment in warm climate of various patient groups including patients with postpolio syndrome is controversial. METHOD: Eighty-eight patients with postpolio syndrome (61 women) were recruited, stratified according to sex, age (above/below 60 years old) and use/not use of electrical wheelchair, and randomized to three groups. Group 1 ($n=30$) underwent treatment in a rehabilitation centre in Tenerife for four weeks in November/December 1999. Group 2 ($n=29$) were treated in two similar centres in Norway for the same period of time, while Group 3 ($n=29$), the control group, followed their ordinary health

care programme. All patients were tested at the start of study, and 3 and 6 months later, including physical tests and several questionnaire and qualitative interviews. Patients in Group 1 and 2 were also tested after the rehabilitation period. RESULTS: Group 1 and 2 improved significantly both in physical tests and subjective ratings. The positive effects in Group 1 tended to exceed the positive effects in Group 2, and the effects lasted longer. Six minutes walking distance in the two groups was 347 m and 316 m, respectively, before the treatment period, 429 m and 362 m immediately after, and 431 m and 356 m 3 months later. Subjective rating of pain (VAS-scale) was 42 and 43, respectively, before treatment, 17 and 31 immediately after, and 28 and 44 3-months later. In the control group, only minor changes were found. CONCLUSIONS: The study seems to document a positive effect of treatment of patients with postpolio syndrome in warm climate

Zijlstra TR, van de Laar MAFJ, Bernelot Moens HJ, Taal E, Zakraoui L, Rasker JJ. Spa treatment for primary fibromyalgia syndrome: a combination of thalassotherapy, exercise and patient education improves symptoms and quality of life. *Rheumatology (Oxford)* 2005;44(4):539-46.

Abstract: OBJECTIVES: To study the effect of a combination of thalassotherapy, exercise and patient education in people with fibromyalgia. METHODS: Patients with fibromyalgia, selected from a rheumatology out-patient department and from members of the Dutch fibromyalgia patient association, were pre-randomized to receive either 2(1/2) weeks of treatment in a Tunisian spa resort, including thalassotherapy, supervised exercise and group education (active treatment) or treatment as usual (control treatment). Primary outcome measure was health-related quality of life, measured with the RAND-36 questionnaire. Secondary measures included the Fibromyalgia Impact Questionnaire, the McGill Pain Questionnaire, the Beck Depression Inventory, tender point score and a 6-min treadmill walk test. RESULTS: Fifty-eight participants receiving the active treatment reported significant improvement on RAND-36 physical and mental component summary scales. For physical health, differences from the 76 controls were statistically significant after 3 months, but not after 6 and 12 months. A similar pattern of temporary improvement was seen in the self-reported secondary measures. Tender point scores and treadmill walk tests improved more after active treatment, but did not reach significant between-group differences, except for walk tests after 12 months. CONCLUSIONS: A combination of thalassotherapy, exercise and patient education may temporarily improve fibromyalgia symptoms and health-related quality of life

Zijlstra TR, Braakman-Jansen LMA, Taal E, Rasker JJ, van de Laar MAFJ. Cost-effectiveness of Spa treatment for fibromyalgia: general health improvement is not for free. *Rheumatology (Oxford)* 2007;46(9):1454-9.

Abstract: OBJECTIVES: To estimate the cost-effectiveness of an adjuvant treatment course of spa treatment compared with usual care only in patients with fibromyalgia syndrome (FM). METHODS: 134 patients with FM, selected from a rheumatology outpatient department and from members of the Dutch FM patient association were randomly assigned to a 2(1/2) week spa treatment course in Tunisia or to usual care only. Results are expressed as quality-adjusted life years (QALYs) for a 6-month as well as a 12-month time horizon. Utilities were derived from the Short Form 6D (SF-6D) scores and the visual analogue scale (VAS) rating general health. Costs were reported from societal perspective. Mean incremental cost per patient and the incremental cost utility ratio (ICER) were calculated; 95% confidence intervals (CIs) were estimated using double-sided bootstrapping. RESULTS: The data of 128 (55 spa and 73 controls) of the 134 patients (96%) could be used for analysis. Improvement in general health was found in the spa group until 6 months of follow-up by both the SF-6D (AUC 0.32 vs 0.30, $P < 0.05$) and the VAS (AUC 0.23 vs 0.19, $P < 0.01$). After 1yr no significant between-group differences were found. Mean incremental cost of spa treatment was 1311 Euro per patient (95% CI 369-2439), equalling the cost of the intervention (thalassotherapy including airfare and lodging), or 885 Euro per patient based on a more realistic cost estimate. CONCLUSIONS: The temporary improvement in quality of life due to an adjuvant treatment course of spa therapy for patients with FM is associated with limited incremental costs per patient

Tabell 3 viser studiene som er inkludert i dette systematiske søk- og sorter notatet fra Kunnskapssenteret og studiene som er inkludert i SINTEF- rapporten.

Vi minner om at Kunnskapssenteret og SINTEF hadde forskjellige bestillere og forskjellig mandat for sine søk og innhenting av litteratur.

Referanse	Systematisk søk og sorter av RCT fra Kunnskapssenteret	SINTEF- rapporten 2011	Begrunnelse der forskjell
Autio P, Komulainen P, Larni HM. Heliotherapy in atopic dermatitis at the Dead Sea: a prospective study on climatotherapy using SCORAD index. <i>Acta Derm Venereol</i> 2002;82(6):436-40.	Nei	Ja	Ikke RCT
Ahnert J, Loffler S, Muller J, Vogel H. [Systematic literature review on interventions in rehabilitation for children and adolescents with asthma bronchiale]. <i>Rehabilitation (Stuttg)</i> 2010;49(3):147-59	Funnet	Funnet	Oversiktsartikkel
Bjerkhoel FJ og Førre Ø med flere 1993. Evaluering av utenlandsbehandlingen for revmatikere. Upublisert rapport 1993.	Ja	Nei	Upublisert rapport.
Broman G, Bahtsevani C, Berg T, Eliasson M, Agens I. Treating asthma and COPD - a systematic review. 2000.	Funnet	Funnet	Oversiktsartikkel
Byremo G, Rod G, Carlsen KH. Effect of climatic change in children with atopic eczema. <i>Allergy</i> 2006;61(12):1403-10.	Ja	Ja	
Clarke-Jenssen AC, Forseth K, Mengshoel A, Staalesen Strumse YA, Bråten T. Effekt av behandlingsopphold i varmt kontra kalt klima for pasienter med fibromyalgi. Oslo Universitetssykehus, Seksjon for behandlingsreiser til utlandet; masteroppgave innlevert november 2012.	Ja	Ja	
Codish S, Dobrovinsky S, Abu Shakra M, Flusser D, Sukenik S. Spa therapy for ankylosing spondylitis at the Dead Sea. <i>Isr Med Assoc J</i> 2005;7(7):443-6.	Nei	Ja	Ikke klimareise, Israel til Israel
Dagfinrud H, Kvien TK, Hagen KB. Physiotherapy interventions for ankylosing spondylitis. <i>Cochrane Database Syst Rev</i> 2008;(1):CD002822.	Funnet	Funnet	Oversiktsartikkel
Dahl A, Skjeldal OH, Simensen A, Dalen HE, Brathen T, Ahlvin P, et al. [Treatment of patients with neuromuscular disease in a warm climate]. <i>Tidsskr Nor Laegeforen</i> 2004;124(13-14):1795-8.	Ja	Ja	
Forseth KO. [Treatment of rheumatic patients in a warm climate abroad]. <i>Tidsskr Nor Laegeforen</i> 2007;127(4):449-52.	Funnet	Funnet	Oversiktsartikkel

Forseth KO, Hafstrom I, Husby G, Opava C. Comprehensive rehabilitation of patients with rheumatic diseases in a warm climate: a literature review. <i>J Rehabil Med</i> 2010;42(10):897-902.	Funnet	Funnet	Oversiktsartikkel
Gaisberger M, Sanovic R, Dobias H, Kolarz P, Moder A, Thalhamer J, et al. Effects of ionized waterfall aerosol on pediatric allergic asthma. <i>J Asthma</i> 2012;49(8):830-8.	Ja	Nei	Publisert etter søket til SINTEF
Harari M, Dramsdahl E, Shany S, Baumfeld Y, Ingber A, Novack V, et al. Increased vitamin D serum levels correlate with clinical improvement of rheumatic diseases after Dead Sea climatotherapy. <i>Isr Med Assoc J</i> 2011;13(4):212-5	Nei	Ja	Ikke en RCT, gruppeinndeling etter diagnose
Haugen TS, Stavem K. Rehabilitation in a warm versus a colder climate in chronic obstructive pulmonary disease: a randomized study. <i>J Mol Signal</i> 2007;27(1):50-6.	Ja	Ja	
Johansson M, Sullivan L. Medical treatment abroad. Therapeutic results of treatment abroad for certain types of rheumatic illness (Swedish). <i>Spri Rapport</i> 1974;No. 19, 1974. Date of Publication og Johansson M, Sullivan L. Influence of treatment and change of climate in women with rheumatoid arthritis. A controlled prospective study of psychological, medical and social effects. <i>Scand J Rheumatol</i> 1974;4(9 sup.)	Ja	Ja	
Katkhanova OA, Sakhnov SN. [Natural physical factors of the Kuban' Black Sea coastal area in the rehabilitative treatment of children with psoriasis and concomitant ophthalmoherpes]. <i>Vopr Kurortol Fizioter Lech Fiz Kult</i> 2009;(2):36-8.	Ja	Nei	Russisk
Koopman FS, Uegaki K, Gilhus NE, Beelen A, de Visser M, Nollet F. Treatment for postpolio syndrome. <i>Cochrane Database Syst Rev</i> 2011;(2):CD007818.	Funnet	Funnet	Oversiktsartikkel
Langhorst J, Musial F, Klose P, Hauser W. Efficacy of hydrotherapy in fibromyalgia syndrome--a meta-analysis of randomized controlled clinical trials. <i>Rheumatology (Oxford)</i> 2009;48(9):1155-9.	Funnet	Funnet	Oversiktsartikkel
Nordby PA, Staalesen Strumse YA, Frosli KF, Stanghelle JK. Patients with neuromuscular diseases benefit from treatment in a warm climate. <i>J Rehabil Med</i> 2007;39(7):554-9.	Ja	Ja	

Schallreuter KU, Moore J, Behrens-Williams S, Panske A, Harari M. Rapid initiation of repigmentation in vitiligo with Dead Sea climatotherapy in combination with pseudocatalase (PC-KUS). <i>Int J Dermatol</i> 2002;41(8):482-7.	Ja	Nei	Denne diagnosen var ikke blant dem SINTEF- rapporten skulle inkludere
Skjeldal OH, Dahl A, Diseth TH. Evaluering av behandlingsreiser til syden for barn og voksne med cerebral parese. Rapport fra Rikshospitalet 2004, Seksjon for behandlingsreiser. Upublisert rapport som ble oversendt til Kunnskapssenteret fra Seksjon for behandlingsreiser i desember 2012.	Ja	Nei	Upublisert rapport
Smedal T, Myhr KM, Aarseth JH, Gjelsvik B, Beiske AG, Glad SB, et al. The influence of warm versus cold climate on the effect of physiotherapy in multiple sclerosis. <i>Acta Neurol Scand</i> 2011;124(1):45-52.	Ja	Ja	
Snellman E, Lauharanta J, Reunanen A, Jansen CT, Jyrkinen-Pakkasvirta T, Kallio M, et al. Effect of heliotherapy on skin and joint symptoms in psoriasis: a 6-month follow-up study. <i>Br J Dermatol</i> 1993;128(2):172-7.	Nei	Ja	Ikke en RCT
Snellman E, Aromaa A, Jansen CT, Lauharanta J, Reunanen A, Jyrkinen-Pakkasvirta T, et al. Supervised four-week heliotherapy alleviates the long-term course of psoriasis. <i>Acta Derm Venereol</i> 1993;73(5):388-92.	Ja	Ja	
Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Rosland M, Winther A, Pajunen PA, et al. The efficacy of rehabilitation for patients with rheumatoid arthritis: comparison between a 4-week rehabilitation programme in a warm and cold climate. <i>Scand J Rheumatol</i> 2009;38(1):28-37.	Ja	Ja	
Staalesen Strumse YA, Nordvag BY, Stanghelle JK, Roisland M, Winther A, Pajunen PA, et al. Efficacy of rehabilitation for patients with ankylosing spondylitis: comparison of a four-week rehabilitation programme in a Mediterranean and a Norwegian setting. <i>J Rehabil Med</i> 2011;43(6):534-42.	Ja	Ja	
Stanghelle JK, Strumse YA, Utne L, Ahlvin P, Svendsby EK. Evaluering av behandlingsreiser til Syden for postpolio-pasienter. Nesoddtangen: Sunnaas sykehus, FOU-enheten; 2000.	Ja	Ja	Samme studie som i Strumse 2001 og Strumse 2003
Strumse YA, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. [Treatment of	Ja	Ja	

patients with postpolio syndrome in warm climate]. Tidsskr Nor Laegeforen 2001;121(17):2003-7
og

Strumse YAS, Stanghelle JK, Utne L, Ahlvin P, Svendsby EK. Treatment of patients with postpolio syndrome in a warm climate. Disabil Rehabil 2003;25(2):77-84.

Zijlstra TR, Braakman-Jansen LMA, Taal E, Rasker JJ, van de Laar MAFJ. Cost-effectiveness of Spa treatment for fibromyalgia: general health improvement is not for free. Rheumatology (Oxford) 2007;46(9):1454-9.
og

Ja

Ja

Zijlstra TR, van de Laar MAFJ, Bernelot Moens HJ, Taal E, Zakraoui L, Rasker JJ. Spa treatment for primary fibromyalgia syndrome: a combination of thalassotherapy, exercise and patient education improves symptoms and quality of life. Rheumatology (Oxford) 2005;44(4):539-46.

Vedlegg 1 Søkestrategier

Søkestrategier

Cochrane library (alle databaser)

Dato: 24.10.2012

ID	Search	
#1	((climat* near (therap* or treatment*)) or climatotherap* or heliotherap* or helio-therap* or heliomarinotherap* or helio-marinotherap*):ti,ab,kw (Word variations have been searched)	79
#2	MeSH descriptor: [Climate] this term only	46
#3	MeSH descriptor: [Altitude] this term only	330
#4	(balneolog* or balneotherap* or balneophototherap* or balneo-phototherap*):ti,ab,kw (Word variations have been searched)	212
#5	((hot or mediterranean or subtropic* or sunny or temperate or therap* or tropic* or warm) near/2 climate*):ti,ab,kw (Word variations have been searched)	105
#6	((mountain or altitude) near climat*):ti,ab,kw (Word variations have been searched)	6
#7	(high near (mountain* or altitude*)):ti,ab,kw (Word variations have been searched)	382
#8	#2 or #3 or #4 or #5 or #6 or #7	886
#9	(rehab* or therap* or treatment*):ti,ab,kw (Word variations have been searched)	367961
#10	#8 or #9	368460
#11	travel*:ti,ab,kw (Word variations have been searched)	820
#12	#10 and #11	417
#13	#8 and #9	387
#14	#1 or #12 or #13	842

Database(s): **Embase** 1974 to 2012 October 18 - Search Strategy:

Dato: 19.10.2012

#	Searches	Results
1	climatotherapy/	476
2	((climat* adj (therap* or treatment*)) or climatotherap* or heliotherap* or helio-therap* or heliomarinotherap* or helio-marinotherap*).tw.	921
3	1 or 2	1184
4	balneotherapy/	6324
5	climate/	20528
6	tropic climate/	5951
7	Altitude/	14608
8	(balneolog* or balneotherap* or balneophototherap* or balneo-phototherap*).tw.	2386
9	((hot or mediterranean or subtropic* or sunny or temperate or therap* or tropic* or warm) adj2 climate*).tw.	3940
10	((mountain or altitude) adj climat*).tw.	238
11	(high adj (mountain* or altitude*)).tw.	9706
12	or/4-11	52736
13	rehabilitation/	42657
14	therapy/	1033425
15	(rehab* or therap* or treatment*).tw.	4882668
16	or/13-15	5447859
17	12 or 16	5492486
18	travel/	23366
19	travel*.tw.	42000
20	18 or 19	51980
21	17 and 20	11006
22	12 and 16	8109
23	3 or 21 or 22	19490
24	Randomized Controlled Trial/	333568
25	Controlled Clinical Trial/	392805
26	(randomi?ed or randomly).tw. or groups.ab. or trial.ti.	1953728
27	((systematic* adj2 review*) or meta-anal*).mp,pt. or (review.mp,pt. and (pubmed or medline or embase or pedro or (database adj2 search*) or (systematic* adj2 search*)).tw.)	174438
28	or/24-27	2236737
29	Nonhuman/	3933896
30	28 not 29	1920018
31	23 and 30	2202
32	limit 31 to embase	1662

Database: **ISI Web of Science**: Science Citation Index Expanded (SCI-EXPANDED) - 1975-present, Social Sciences Citation Index (SSCI) - 1975-present, Arts & Humanities Citation Index (A&HCI) - 1975-present
 Dato: 16.10.2012

# 19	2,500	#17 not #18
# 18	510,404	Topic=(animals not (human and animals))
# 17	2,622	#16 AND #11
# 16	3,318,610	#15 OR #14 OR #13 OR #12
# 15	38,527	Topic=((review and (pubmed or medline or embase or pedro or (database adj2 search*) or (systematic* adj2 search*))))
# 14	85,228	Topic=(((systematic* NEAR/2 review*) or meta-anal*))
# 13	3,207,578	Topic=((placebo or randomly or trial or groups))
# 12	434,374	Topic=(randomised or randomized)
# 11	11,331	#10 OR #9 OR #1
# 10	1,924	#6 AND #4
# 9	7,858	#8 AND #7
# 8	103,213	Topic=(travel*)
# 7	3,742,065	#6 OR #5 OR #4
# 6	3,457,230	Topic=((rehab* or therap* or treatment*))
# 5	297,752	Topic=(("Atlantic Island*" or Croatia or "Dead Sea" or "Gran Canaria" or Greece or Israel or Lancarote or Mediterranean or Montenegro or "Red Sea" or Spain or Tenerife or Thailand or Turkey))
# 4	18,337	#3 OR #2
# 3	17,837	Topic=(((hot or mediterranean or subtropic* or sunny or temperate or therap* or tropic* or warm) NEAR/2 climate*))
# 2	502	Topic=((balneolog* or balneotherap* or balneophototherap* or balneophototherap*))
# 1	1,982	Topic=(((climat* NEAR (therap* or treatment*)) or climatotherap* or heliotherap* or helio-therap* or heliomarinotherap* or helio-marinotherap*))

Database(s): **Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R)** 1946 to Present
 Dato: 19.10.2012

#	Searches	Results
1	Climatotherapy/	405
2	Heliotherapy/	396
3	((climat* adj (therap* or treatment*)) or climatotherap* or heliotherap* or helio-therap* or heliomarinotherap* or helio-marinotherap*).tw.	749

4	or/1-3	1347
5	Balneology/	5314
6	climate/	14530
7	tropical climate/	7641
8	Altitude/	12456
9	(balneolog* or balneotherap* or balneophototherap* or balneo- phototherap*).tw.	1737
10	((hot or mediterranean or subtropic* or sunny or temperate or therap* or tropic* or warm) adj2 climate*).tw.	3252
11	((mountain or altitude) adj climat*).tw.	183
12	(high adj (mountain* or altitude*)).tw.	8162
13	or/5-12	44503
14	Rehabilitation/	16212
15	Rehabilitation.fs.	154275
16	Therapeutics/	7465
17	Therapy.fs.	1335366
18	(rehab* or therap* or treatment*).tw.	3764164
19	or/14-18	4495241
20	13 or 19	4531999
21	Travel/	18041
22	travel*.tw.	34575
23	or/21-22	43787
24	20 and 23	9264
25	13 and 19	7745
26	4 or 24 or 25	17527
27	(randomized controlled trial or controlled clinical trial).pt. or randomi?ed.tw. or (placebo or randomly or trial or groups).ab.	1777309
28	((systematic* adj2 review*) or meta-anal*).mp.pt. or (review.mp.pt. and (pubmed or medline or embase or pedro or (database adj2 search*) or (sys- tematic* adj2 search*)).tw.)	123252
29	27 or 28	1854132
30	26 and 29	2033
31	exp Animals/	16425004
32	Humans/	12627626
33	31 not (31 and 32)	3797378
34	30 not 33	1763

PubMed

Dato: 19.10.2012

Search	Query	Items found
#20	Search (#18) AND #19	51
#19	Search publisher[sb]	420567
#18	Search (#12) AND #17	2830
#17	Search (((#13) OR #14) OR #15) OR #16	2268506
#16	Search ((database AND search*) or (systematic* AND search*))	50977
#15	Search (review AND (pubmed or medline or embase or pedro))	53370
#14	Search "systematic review" OR "systematic reviews" OR "meta-analysis" OR meta-analyses"	89223
#13	Search randomised OR randomized OR placebo OR randomly OR trial OR groups	2185012
#12	Search ((#1) OR #10) OR #11	17749
#11	Search (#6) AND #7	7087
#10	Search (#8) AND #9	9948
#9	Search travel*	44516
#8	Search (#6) OR #7	4474783
#7	Search (rehabilitat* OR therap* OR treatment*)	4447237
#6	Search (((#2) OR #3) OR #4) OR #5	34633
#5	Search high mountain* OR high altitude*	8452
#4	Search mountain climat* OR altitude climat*	174
#3	Search ((hot OR mediterranean OR subtropic* OR sunny OR temperate OR therapy OR tropic* OR warm) AND climate*)	20638
#2	Search balneolog* OR balneotherap* OR balneophototherap* OR "balneo-phototherapy"	6006
#1	Search ("climate therapy" OR "climatic therapy" OR "climate treatment" OR "climatic treatment" OR "climate treatments" OR "climatic treatments" OR climatotherapy OR climatotherapeutic OR heliotherapy OR heliomarinotherapy)	1335

Vedlegg 2 Ekskluderte referanser

Referanse	Begrunnelse for ekskludering
Ahnert J, Loffler S, Muller J, Vogel H. [Systematic literature review on interventions in rehabilitation for children and adolescents with asthma bronchiale]. <i>Rehabilitation (Stuttg)</i> 2010;49(3):147-59.	Oversiktsartikkel – ingen RCT for våre inklusjonskriterier
Austad J. Climate therapy of Norwegian psoriasis patients. <i>Acta Derm Venereol</i> 1984;64(SUPPL. 113):145-6.	Ikke RCT
Beamon SP, Falkenbach A, Fainburg G, Linde K. Speleootherapy for asthma. <i>Cochrane Database Syst Rev</i> 2009;(4):CD001741.	Oversiktsartikkel, annen problemstilling, radonbehandling i gruver
Boner AL, Comis A, Schiassi M, Venge P, Piacentini GL. Bronchial reactivity in asthmatic children at high and low altitude: Effect of budesonide. <i>Am J Respir Crit Care Med</i> 1995;151(4):1194-200.	Ikke RCT – alle barna fikk høydebehandling
Buskila D, Abu-Shakra M, Neumann L, Odes L, Shneider E, Flusser D, et al. Balneotherapy for fibromyalgia at the Dead Sea. <i>Rheumatol Int</i> 2001;20(3):105-8.	Ikke om klimareise
Carpentier PH, Satger B. Randomized trial of balneotherapy associated with patient education in patients with advanced chronic venous insufficiency. <i>J Vasc Surg</i> 2009;49(1):163-70.	Ikke om klimareise, spa- effekt
Carville SF, Arendt-Nielsen S, Bliddal H, Blotman F, Branco JC, Buskila D, et al. EULAR evidence-based recommendations for the management of fibromyalgia syndrome. <i>Ann Rheum Dis</i> 2008;67(4):536-41.	Oversiktsartikkel, ingen RCT funnet til våre inklusjonskriterier
Christie A, Jamtvedt G, Dahm KT, Moe RH, Haavardsholm EA, Hagen KB. Effectiveness of nonpharmacological and nonsurgical interventions for patients with rheumatoid arthritis: An overview of systematic reviews. <i>Phys Ther</i> 2007;87(12):1697-715.	Oversiktsartikkel, ingen RCT funnet til våre inklusjonskriterier
Claes C, Kulp W, Greiner W, von der Schulenburg J-M, Werfel T. Therapy of moderate and severe psoriasis. <i>GMS Health Technol Assess</i> 2006;2:Doc07.	Oversiktsartikkel, ingen RCT funnet til våre inklusjonskriterier
Codish S, Dobrovinsky S, Abu Shakra M, Flusser D, Sukenik S. Spa therapy for ankylosing spondylitis at the Dead Sea. <i>Isr Med Assoc J</i> 2005;7(7):443-6.	Ikke klimareise, Israel til Israel
Elkayam O, Wigler I, Tishler M, Rosenblum I, Caspi D, Segal R, et al. Effect of spa therapy in Tiberias on patients with rheumatoid arthritis and osteoarthritis. <i>J Rheumatol</i> 1991;18(12):1799-803.	Ikke klimareise
Elkayam O, Ophir J, Brener S, Paran D, Wigler I, Efron D, et al. Immediate and delayed effects of treatment at the Dead Sea in patients with psoriatic arthritis. <i>Rheumatol Int</i> 2000;19(3):77-82.	Ikke klimareise, spa

Even-Paz Z, Gumon R, Kipnis V, Abels DJ, Efron D. Dead Sea sun versus Dead Sea water in the treatment of psoriasis. <i>J Dermatolog Treat</i> 1996;7(2):83-6.	Ikke klimareise
Farbu E, Gilhus NE, Barnes MP, Borg K, De VM, Driessen A, et al. EFNS guideline on diagnosis and management of post-polio syndrome. Report of an EFNS task force. <i>Eur J Neurol</i> 2006;13(8):795-801.	Oversiktsartikkel, 1 RCT også funnet i vårt søk: Strumse 2003
Forestier R, Andre-Vert J, Guillez P, Coudeyre E, Lefevre-Colau M-M, Combe B, et al. Non-pharmacological non-surgical treatment of rheumatoid arthritis: Medico-social and organizational aspects Clinical practice guidelines. <i>Kinesitherapie</i> 2012;12(123):30-40.	Oversiktsartikkel, 1 oversiktsartikkel allerede hentet
Forseth KO. [Treatment of rheumatic patients in a warm climate abroad]. <i>Tidsskr Nor Laegeforen</i> 2007;127(4):449-52.	Oversiktsartikkel, 2 RCT også funnet i vårt søk: Strumse 2001, Strumse 2009
Forseth KO, Hafstrom I, Husby G, Opava C. Comprehensive rehabilitation of patients with rheumatic diseases in a warm climate: a literature review. <i>J Rehabil Med</i> 2010;42(10):897-902.	Oversiktsartikkel, 1 RCT også funnet i vårt søk: Johansson 1974
Golsch S, Remy W. The influence of climate therapy on patients with psoriasis vulgaris and atopic dermatitis (high altitude region versus North Sea versus dermatological clinic 'without climatic factors'). Proposal for the construction of a prospective study design. <i>Pravention und Rehabilitation</i> 1994;6(3):109-12.	Ikke RCT
Grootendorst DC, Dahlen SE, Van Den Bos JW, Duiverman EJ, Veselic-Charvat M, Vrijlandt EJ, et al. Benefits of high altitude allergen avoidance in atopic adolescents with moderate to severe asthma, over and above treatment with high dose inhaled steroids. <i>Clin Exp Allergy</i> 2001;31(3):400-8.	Ikke RCT
Harms V, Buhles N, Folster-Holst R, Gonda S, Kiosz D, Schuh H, et al. Therapy of atopic dermatitis at the seaside of the North Sea and Baltic Sea: Therapeutic methods and quantification of the effect: A multicenter study. <i>Physikalische Medizin Rehabilitationsmedizin Kurortmedizin</i> 2002;12(2):89-94.	Ikke RCT, mangler kontrollgruppe
Herold M, Lind-Albrecht G. [Radon within therapeutic strategies of ankylosing spondylitis]. <i>Wien Med Wochenschr</i> 2008;158(7-8):209-12.	Oversiktsartikkel om radonbehandling
Huss-Marp J, Kramer U, Eberlein B, Pfab F, Ring J, Behrendt H, et al. Reduced exhaled nitric oxide values in children with asthma after inpatient rehabilitation at high altitude. <i>J Allergy Clin Immunol</i> 2007;120(2):471-2.	Ikke RCT
Kapstad B, Noreik K. [Therapeutic journeys to the South for patients with rheumatism--medical treatment alternative or alternative medicine?]. <i>Tidsskr Nor Laegeforen</i> 1994;114(2):187-9.	Ikke RCT
Karagulle M, Karagulle MZ, Karagulle O, Donmez A, Turan M. A 10-day course of SPA therapy is beneficial for people with severe knee osteoarthritis. <i>Clin Rheumatol</i> 2007;26(12):2063-71.	Ikke klimareise
Katz U, Shoenfeld Y, Zakin V, Sherer Y, Sukenik S. Scientific evidence of the therapeutic effects of dead sea treatments: a systematic review. <i>Semin Arthritis Rheum</i> 2012;42(2):186-200.	Oversiktsartikkel, ingen som passet våre inklusjonskriterier
Koopman FS, Uegaki K, Gilhus NE, Beelen A, de Visser M, Nollet F. Treatment for postpolio syndrome. <i>Cochrane Database Syst Rev</i> 2011;(2):CD007818.	Oversiktsartikkel, 1 RCT også funnet i søket: Strumse 2003
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Ozkurt S, Donmez A, Zeki Karagulle M, Uzunoglu E, Turan M, Erdogan N. Balneotherapy in fibromyalgia: a single blind randomized controlled clinical study. <i>Rheumatol Int</i> 2012;32(7):1949-54.	Ikke klimareise, Tyrkia til Tyrkia
Paran E, Neuman L, Sukenik S. Blood pressure changes at the Dead Sea (a low altitude area). <i>J Hum Hypertens</i> 1998;12(8):551-5.	Ikke klimareise, Israel til Israel
Paskova S, Kolesar J, Siposova E. [Pulmonary autoantibodies in bronchial asthma patients undergoing cave and climate therapy in Bystra]. <i>Allerg Immunol (Leipz)</i> 1976;22(1):23-7.	Annen problemstilling, klima sammenlignet med grotte
Peroni DG, Piacentini GL, Martinati LC, Warner JO, Boner AL. Double-blind trial of house-dust mite immunotherapy in asthmatic children resident at high altitude. <i>Allergy</i> 1995;50(11):925-30.	Ikke RCT
Petermann F, Gulyas AF, Niebank K, Warschburger P. Effects of Allergen Avoidance at High Altitude on Children with Asthma or Atopic Dermatitis. <i>Pediatric Asthma, Allergy and Immunology</i> 2004;17(1):15-24.	Ikke RCT
Piacentini GL, Peroni DG, Vicentini L, Benedetti M, Spezia E, Martinati LC. [Beta-2 agonists, exposure to allergens and bronchial hyperreactivity in children with allergic asthma]. <i>Pediatr Med Chir</i> 1995;17(6):515-7.	Ikke RCT
Prusek W, Jankowski A, Radomska G, Wieczorek E, Podwysocka M. Immunostimulation in recurrent respiratory tract infections therapy in children. <i>Arch Immunol Ther Exp (Warsz)</i> 1987;35(3):289-302.	Ikke RCT
Ratner ZG, Pyrig LA, Chumanskii LI, Savchenko IK, Gerasimova ZS. [Effectiveness of sanatorium treatment of patients with chronic glomerulonephritis depending on their permanent residence]. <i>Vrach Delo</i> 1989;(5):72-5.	Ikke RCT
Schuh A, Kneist W, Philipona R. Heliotherapy in high mountain area with quantified dose of solar radiation: Influence of vitamin D3 level of patients with psoriasis. <i>Physikalische Medizin Rehabilitationsmedizin Kurortmedizin</i> 1995;5(SUPPL. 1):21-4.	Ikke RCT
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Smith N, Weymann A, Tausk FA, Gelfand JM. Complementary and alternative medicine for psoriasis: A qualitative review of the clinical trial literature. <i>J Am Acad Dermatol</i> 2009;61(5):841-56.	Oversiktsartikkel, ingen RCT som passer våre inklusjonskriterier
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Pakkasvirta T, Luoma J. Effect of heliotherapy on the cost of psoriasis. <i>Br J Dermatol</i> 1998;138(2):288-92.	
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Strauss-Blasche G, Ekmekcioglu C, Leibetseder V, Melchart H, Marktl W. Seasonal variation in effect of spa therapy on chronic pain. <i>Chronobiol Int</i> 2002;19(2):483-95.	Ikke RCT
Sukenik S, Flusser D, Codish S, Abu-Shakra M. Balneotherapy at the Dead Sea area for knee osteoarthritis. <i>Isr Med Assoc J</i> 1999;1(2):83-5.	Ikke klimareise, Israel til Israel
Sukenik S, Neumann L, Flusser D, Kleiner-Baumgarten A, Buskila D. Balneotherapy for rheumatoid arthritis at the Dead Sea. <i>Isr J Med Sci</i> 1995;31(4):210-4.	Ikke klimareise, Israel til Israel
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