Effect of pressure and shear on skin vitality

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This study will investigate the effect of shear and pressure on tissue viability of human skin. Skin vitality is determined by tissue oxygenation and blood flow, measured with the 'Oxygen to See'. The focus will be on individual response...

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON25894

Bron
NTR

Aandoening

Pressure ulcers - skin vitality - pressure - shear - blood flow
Decubitus - doorligwonden - huid vitaliteit - doorbloeding - druk - afschuiving

Pressure ulcers are a significant problem in healthcare, not only affecting the quality of life, morbidity and mortality of patients but also in terms of healthcare costs. The prevalence of pressure ulcers in healthcare institutions in the Netherlands was on average 8.3% (range 0% - 24%) in 2012. These figures are comparable with other Western countries such as UK, Canada and the USA . Most pressure ulcers in healthcare institutions in the Netherlands heal within three months, but in the home care situation almost 50% of the pressure ulcers do not heal within six months. The costs associated with pressure ulcers in the Netherlands alone is over 200 million Euros annually.
Although the exact aetiology of pressure ulcers is still under debate, there is consensus that pressure ulcers develop when tissue is devitalized. Tissue viability depends on the microcirculation for the exchange of oxygen, carbon dioxide, nutrients, water and waste products. If the microcirculation is blocked, waste products accumulate and an oxygen deficiency arises, leading to deterioration of the cells and the tissues. A few factors are directly linked to the development of pressure ulcers: immobility, mechanical loading (pressure and/or shear), moisture and ischemia. Immobility is seen as a prerequisite for the development of a pressure ulcer, and also has an effect on the mechanical load exerted on

the tissue.
If loading is persistent for a longer period of time, tissue damage can occur as a direct result of internal stresses or as an indirect results of changed blood circulation.
To improve prevention of pressures ulcers, more knowledge is needed on the relation between loading on the skin and the change in blood circulation. In particular, the effect of shear on the skin microcirculation is unknown. Within this research we want to investigate the relation between pressure and/or shear and the change in circulation and whether this response changed with age of patient groups.

Ondersteuning

Primaire sponsor: Roessingh Research & Development
Overige ondersteuning: STW

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Oxygensaturation and blood flow, during and after load application. The change in these parameters for different combinations of pressure and shear.

Toelichting onderzoek

Doel van het onderzoek

This study will investigate the effect of shear and pressure on tissue viability of human skin. Skin vitality is determined by tissue oxygenation and blood flow, measured with the 'Oxygen to See'. The focus will be on individual response patterns and possibly identification of groups of response patterns. The aim of this study is to gather new knowledge on the effect of shear and thereby help in quantifying the risk for development of pressure ulcers.

Onderzoeksopzet

Intervention is scheudled in one or two session (maximal 7 days apart). During these sessions the primary and secondairy parameters will be measured.

Onderzoeksproduct en/of interventie

Application of eight different randomised (block randomisation) pressure and shear combinations on the sacrum. Each condition start with a one minute baseline (no load),

followed by application of the load during 5 minutes and after load removal the reaction will be measured for 7.5 minutes.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Healthy participants

- Age between 18 and 35 years OR 60 years or older

- Considered to be healthy

- Caucasian/ white skin color

Spinal Cord Injured patients

- Minimal 1 year after lesion

- Complete spinal cord injury

- Wheelchair bound in daily life

- Caucasian/ white skin color

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Healthy participants

- Skin colour deviations at site of measurement

- Surgery at the area of measurement

- Pregnancy

- Unable of lying still for 2 hours

- History of pressure ulcers or other circulation diseases (e.g. diabetes)

Spinal Cord Injured patients

- Skin colour deviations at site of measurement

- Surgery at the area of measurement

- Pregnancy

- Unable of lying still for 1 hour

- A pressure ulcer category 2 or higher in the past year

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-07-2015
Aantal proefpersonen:	30
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	17-06-2015
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 43741
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL5124
NTR-old	NTR5256

Register	ID
CCMO	NL53767.044.15
OMON	NL-OMON43741

Resultaten