Measuring the skin tension of the human body

Gepubliceerd: 19-03-2020 Laatst bijgewerkt: 13-12-2022

The amount of skin tension and the direction of highest skin tension is influenced by posture changes and the location of the body.

Ethische beoordeling	Niet van toepassing
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON20163

Bron
NTR

Verkorte titel
Skin Tension

Aandoening

Only healthy individuals are included.

Ondersteuning

Primaire sponsor: LUMC dermatology department
Overige ondersteuning: No funding

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Skin tension in N/mm, which is compared between five locations on the body and between three anatomical positions per location

Toelichting onderzoek

Achtergrond van het onderzoek

Knowledge about the mechanical properties of the skin are important for skin surgery and wound healing. Currently, guidelines like the Langer lines are used to plan incisions for skin surgery and wound closure. However, these lines turn out not to be universal and they are a static representation of the tension on the skin, whereas it has been found that the direction of highest tension on the skin changes. To improve the results of skin surgery, the direction of an incision and skin closure should be adapted to individual variations and to dynamic characteristics of the skin of the patient. To continue searching for the best incision lines, several researchers have tried to build a device that measures skin tension in vivo in a non-invasive way, prior to an operation. In this study, a new skin tension measurement device is used to quantify the skin tension at different locations all over the body in several anatomical positions.

Doel van het onderzoek

The amount of skin tension and the direction of highest skin tension is influenced by posture changes and the location of the body.

Onderzoeksopzet

Every participant is invited to one measurement session. During the session of approximately an hour, all measurements described under "intervention" are performed. Every measurement on a specific location in a specific direction results in a skin tension in Newton per millimeters (primary outcome). After the measurements in six directions, the results are compared to find out the direction of highest tension on that location, which is thus 0, 30, 60, 90, 120 or 150 degrees from the Langer lines on that location (secondary outcome). This direction of highest tension is derived for each body location in three different anatomical positions.

Onderzoeksproduct en/of interventie

Measurements of skin tension using a skin tensiometer device. The skin tensiometer is a new prototype developed in the LUMC that is called 'Compressiometer'. By applying compression to the skin with a certain amount of force and measuring the displacement induced, a skin tension in N/mm is derived. The measurements are done on five locations (posterior upper arm, volar forearm, upper back, lower back and stomach) and on each location in six directions (0, 30, 60, 90, 120 and 150 degrees from the direction of the Langer lines at that location). At each location, the measurements are done while the participant is in three different anatomical positions.

Contactpersonen

Publiek

LUMC
Karlijn Scheepens

0645047337

Wetenschappelijk

LUMC
Karlijn Scheepens

0645047337

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Healthy individuals within the age range of 18 – 40 years

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Physical movement impairment; skin disease present; connective tissue disease present; a scar, wound or damaged skin at one of the investigating sites; contact allergy for glue/plasters (especially product used in this study: 3M ‘red dot’ stickers)

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Anders

Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-04-2020
Aantal proefpersonen:	34
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nee

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL8476
Ander register	METC Leiden-Den Haag-Delft : METC-LDD P19.012

Resultaten