

Aging, chronic disease, mitoPO2 and mitoVO2

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Greater age will be associated with a lower mitoVO2 and mitoPO2. Comorbidities likewise will be associated with a lower mitoVO2 and mitoPO2

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON25614

Bron

NTR

Verkorte titel

TBA

Aandoening

Diabetes Mellitus type II, Obesity, and Neurodegenerative diseases

Ondersteuning

Primaire sponsor: Erasmus Medical Center Rotterdam

Overige ondersteuning: N/A

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

- To investigate the association between age and mitoPO2 values

Toelichting onderzoek

Achtergrond van het onderzoek

A new technique to measure mitochondrial oxygen tension was recently developed and calibrated by our lab. With this technique, mitochondrial oxygen tension 'mitoPO₂' and mitochondrial oxygen consumption 'mitoVO₂' can be measured in human skin. This led to the introduction of the COMET, an acronym of Cellular Oxygen METabolism (COMET, Photonics Healthcare B.V. Utrecht) which enables bed-side monitoring of mitoPO₂ and mitoVO₂ in real time. Previous studies have illustrated the potential of these measurements in various clinical conditions, unfortunately the influence of aging and chronic disease has not been examined. Before the COMET monitor can be used in clinical settings, it has to be known if these factors have any influence on the measurements. This study will therefore, examine the association between age and mitoPO₂ and mitoVO₂ values. Secondly, it will investigate whether there is any association between comorbidity and mitoPO₂.mitoVO₂. Lastly, the study will evaluate if mitoPO₂ and mitoVO₂ values differ between measurement location namely, the upper arm or sternum. This is because measurement locations vary in different clinical settings.

Doel van het onderzoek

Greater age will be associated with a lower mitoVO₂ and mitoPO₂. Comorbidities likewise will be associated with a lower mitoVO₂ and mitoPO₂

Onderzoeksopzet

Measurement day

Contactpersonen

Publiek

Erasmus Medical Center Rotterdam
Calvin de Wijs

00310683598940

Wetenschappelijk

Erasmus Medical Center Rotterdam
Calvin de Wijs

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Healthy Volunteers

- Aged ≥ 18 and ≤ 90 years old
- Acceptable proficiency of the Dutch language
- Healthy volunteers without physical or mental illness

Comorbidity group

- Aged ≥ 18 and ≤ 90 years old
- Acceptable proficiency of the Dutch language
- One of the underlying illnesses: neurodegenerative disease, diabetes mellitus type II or obesity (BMI>30), no other relevant comorbidity

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Porphyria
- Known intolerance to components of the ALA plaster
- Presence of mitochondrial disease
- Pregnancy/lactation
- Patients with skin lesions on the measurement location which impede measurements
- Incapability to provide informed consent, due to a mental condition interfering with the ability to understand the provided information

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland
Status: Werving gestart
(Verwachte) startdatum: 01-05-2021
Aantal proefpersonen: 319
Type: Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Ethische beoordeling

Positief advies
Datum: 16-08-2021
Soort: Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 51166
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL9670
CCMO	NL76685.078.21
OMON	NL-OMON51166

Resultaten