

Voeding voor het Brein

Een nieuwe visie op neurologische en mentale gezondheidszorg

Ass. Prof. Dr. Eline Dekeyster
e.a.g.dekeyster@fsw.leidenuniv.nl



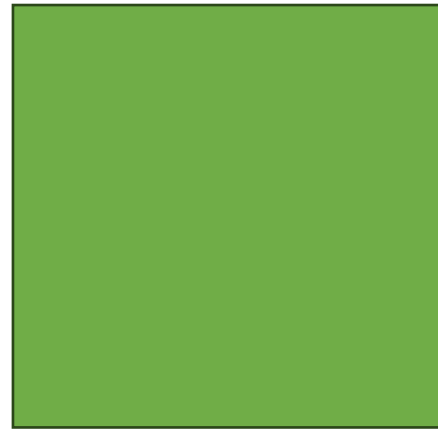
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LBI

Lifestyle Brain Interaction

Feiten versus fabels

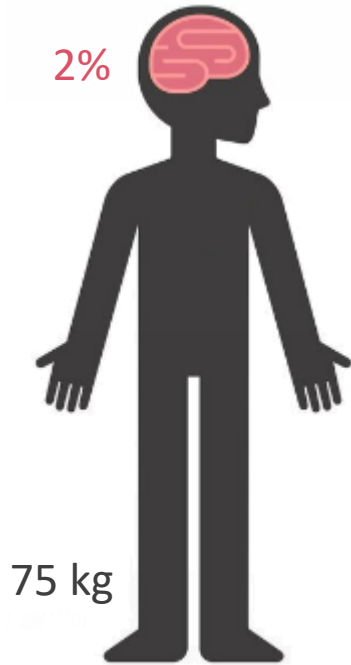


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Lifestyle Brain Interaction

Feiten versus fabels



*De hersenen van een
volwassen mens wegen
ongeveer ~~8~~ kilogram
1,5*

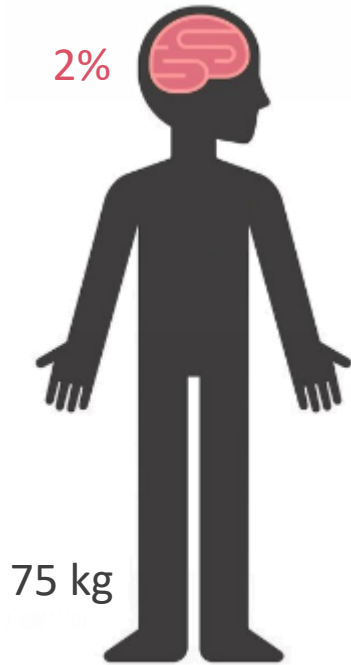


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Lifestyle Brain Interaction

Feiten versus fabels



*Onze hersenen gebruiken
20% van de energie
die we eten*

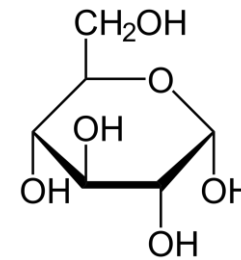


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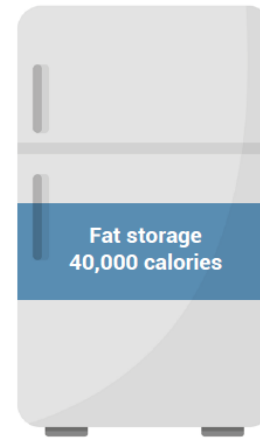


Lifestyle Brain Interaction

Standaard Nederlands Dieet



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Feiten versus fabels

Een volwassen mens kan gemiddeld

~~25~~ *dagen overleven zonder eten*

48 tot 73

(record 382)

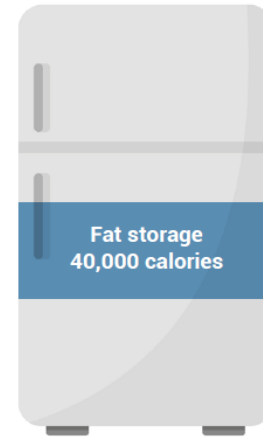
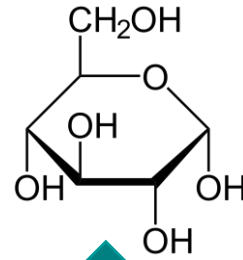


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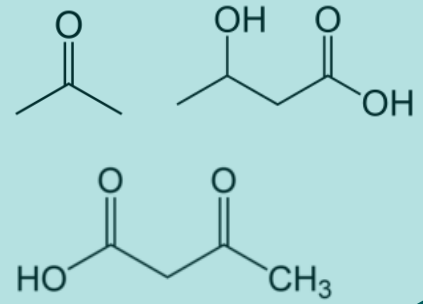
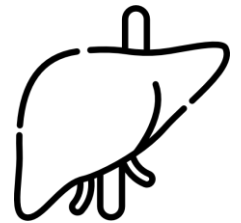


Lifestyle Brain Interaction

Vasten



Ketonen

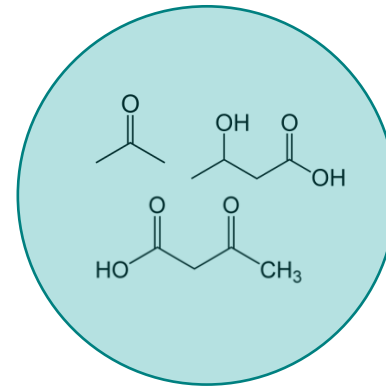
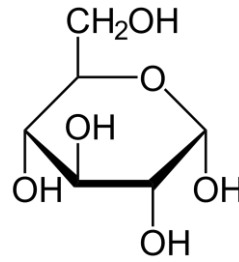


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Lifestyle Brain Interaction

Ketonen



Glucose	Ketonen
Snelle energie	Trager, maar meer opbrengst
Afhankelijk van insuline	Onafhankelijk van insuline
Verstoord bij metabole deficiënties	Alternatieve wegen



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Lifestyle Brain Interaction

Feiten versus fabels

*Het is belangrijk om voldoende
anti-oxidanten te eten*



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Lifestyle Brain Interaction

Feiten versus fabels

*De hersenen kunnen goed
functioneren zonder glucose*

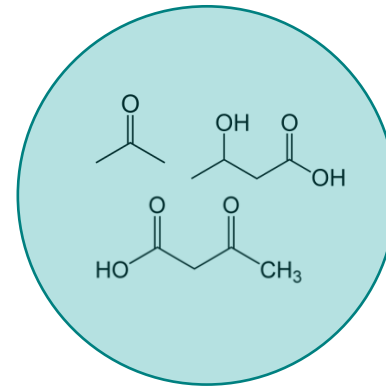
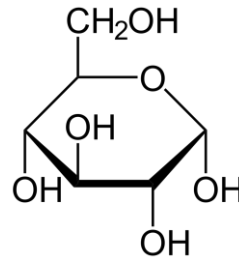


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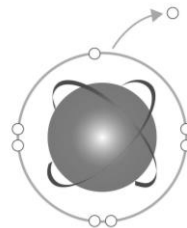


Lifestyle Brain Interaction

Ketonen



Glucose	Ketonen
Snelle energie	Trager, maar meer opbrengst
Afhankelijk van insuline	Onafhankelijk van insuline
Verstoord bij metabole deficiënties	Alternatieve wegen
Inflammatie en oxidatie	Zuiver en efficiënt
Sommige hersencellen hebben glucose nodig	Voorkeur brandstof voor de meeste hersencellen

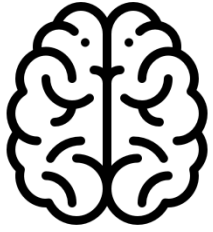
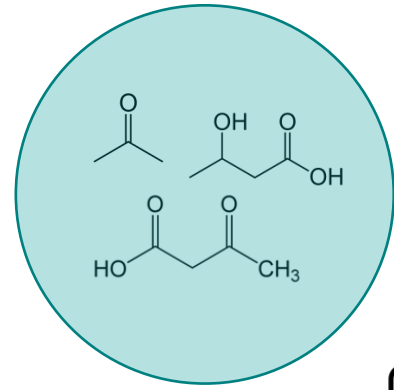


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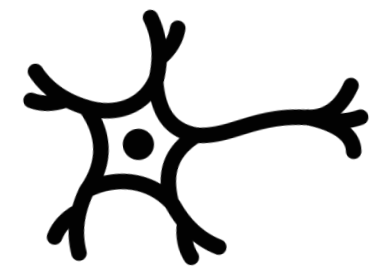
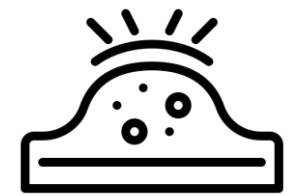
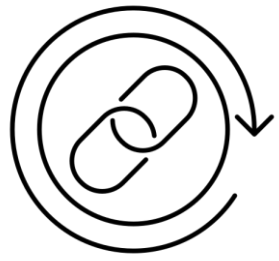


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Ketonen



Ketose
 $\geq 0,5 \text{ mmol/L}$



Ketogene
interventies



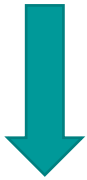
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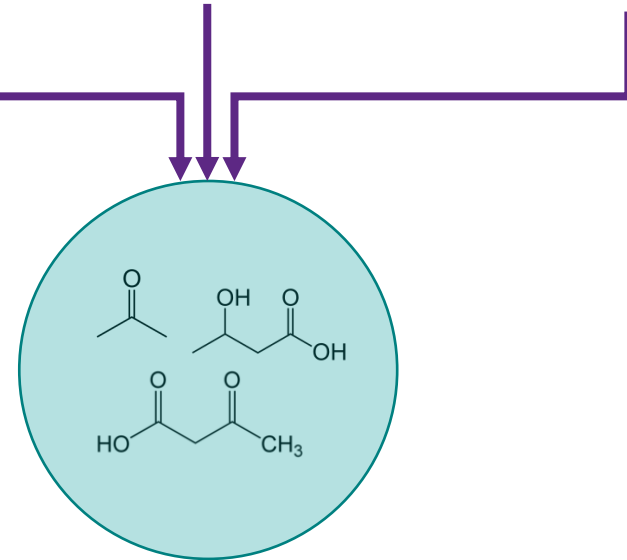
Lifestyle Brain Interaction

Ketonen

Ketogene
interventies



Ketose
 $\geq 0,5$ mmol/L

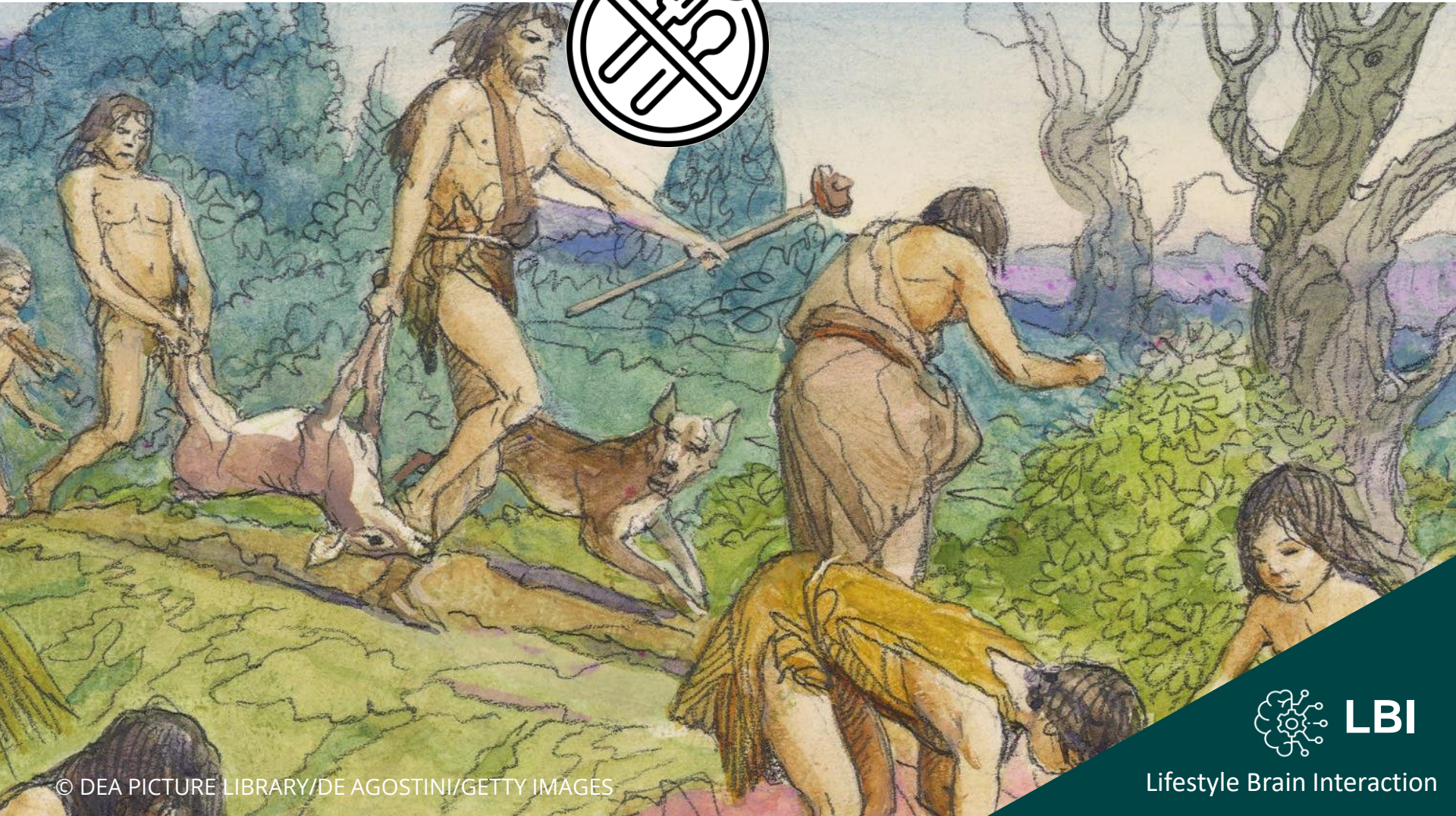


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Lifestyle Brain Interaction

Ketonen



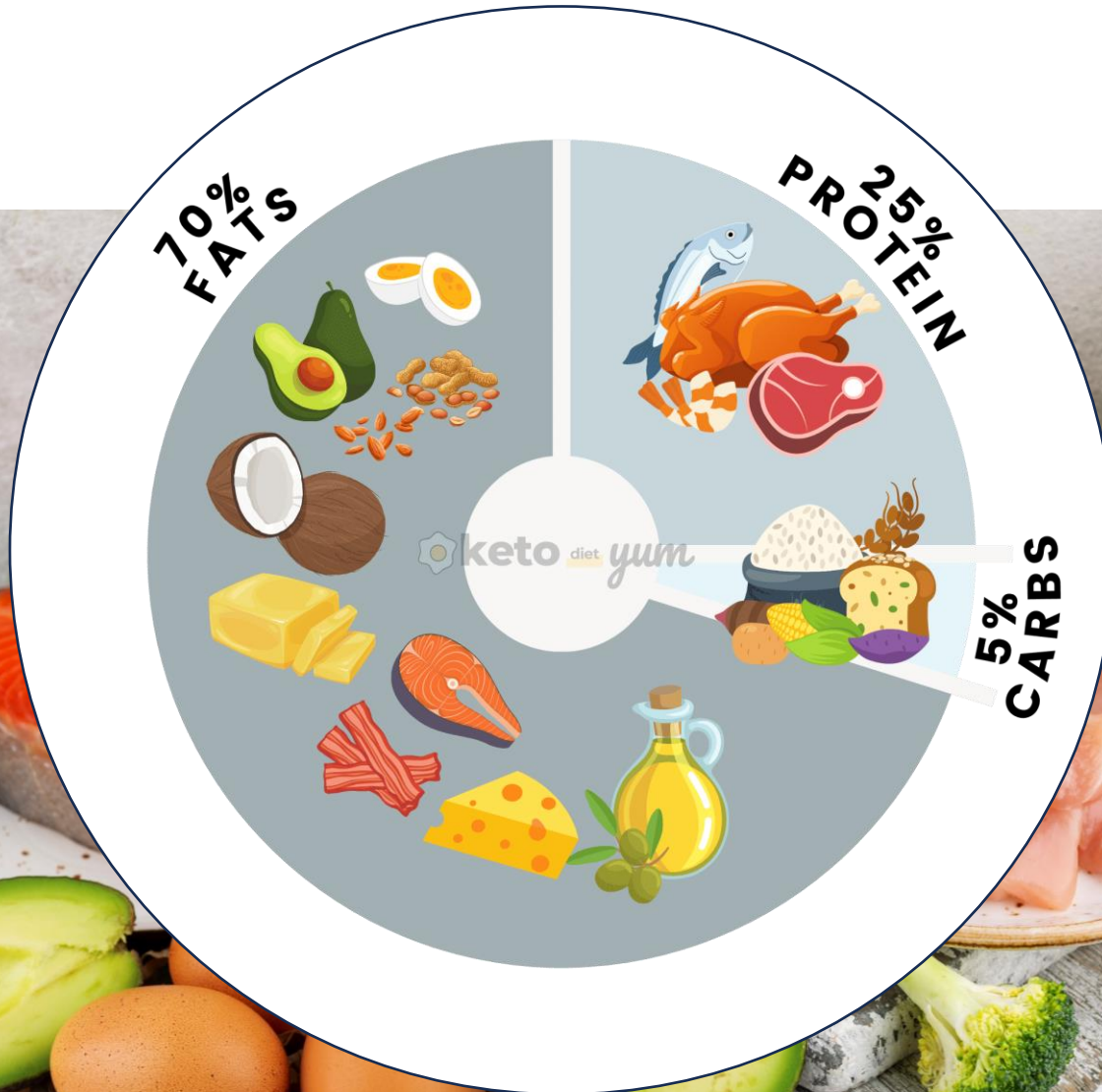
Ketonen



Ketonen



Ketonen



Feiten versus fabels

Een ketogeen dieet is gevaarlijk

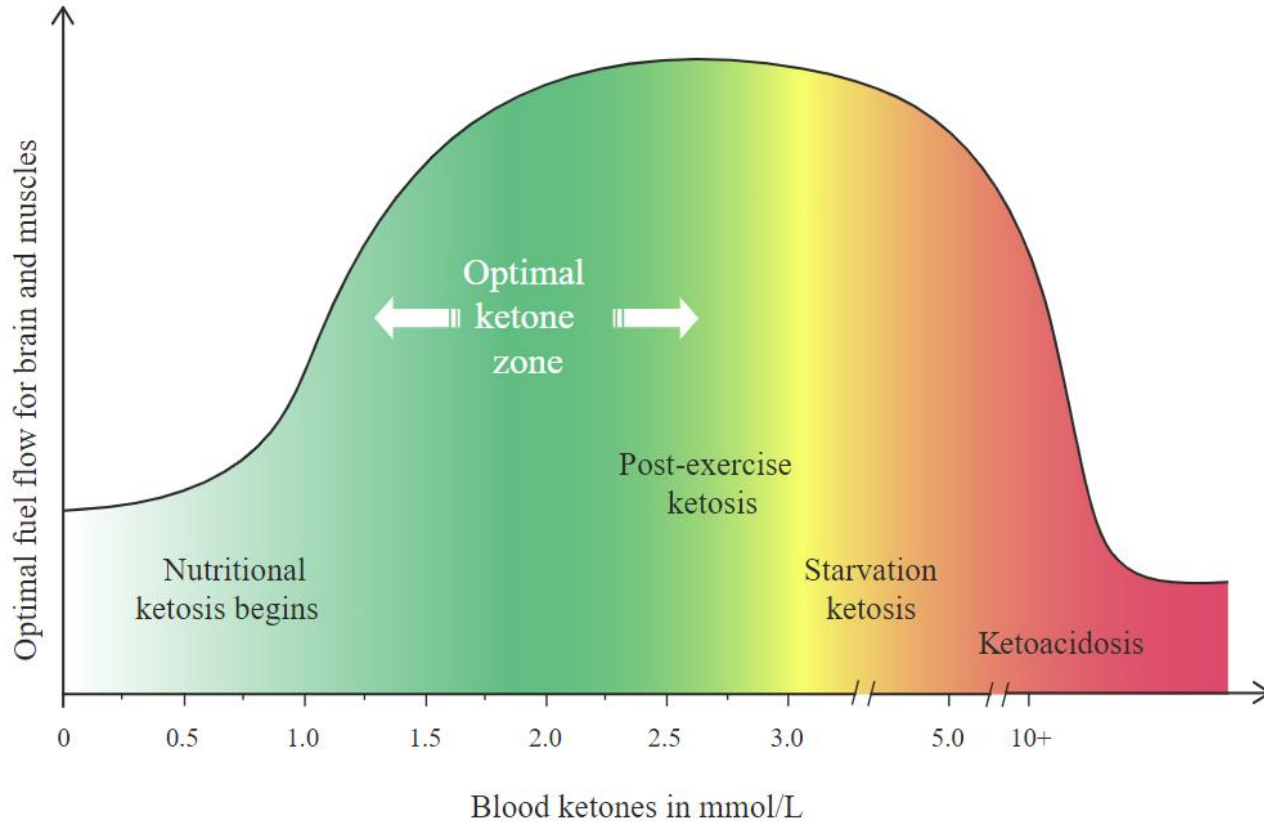


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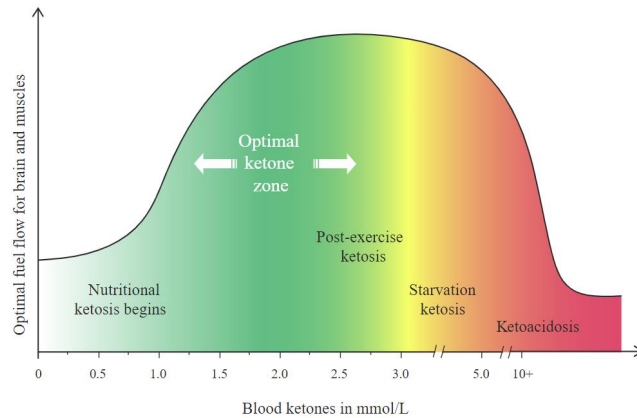
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Keto-acidose



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Contra-indicaties



- Ongecontroleerde diabetes
- Stofwisselingsziekten
- Verstoord vetprofiel
- Hartritme stoornissen
- Leverziekte
- Nierstenen
- Bepaalde medicatie



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Lifestyle Brain Interaction

Feiten versus fabels

*Verzadigd vet is slecht
en onverzadigd vet is goed*

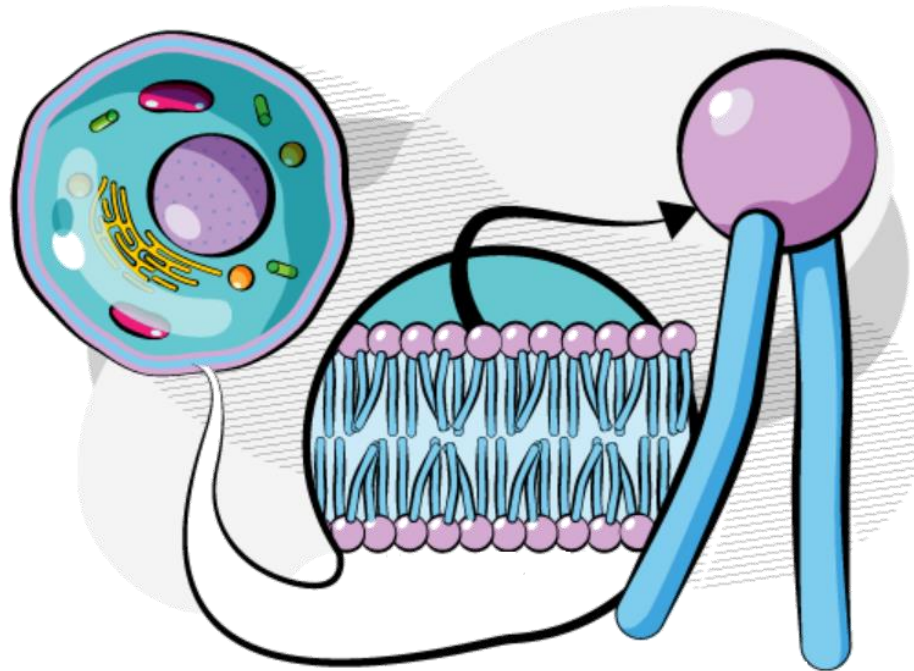


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Lifestyle Brain Interaction

Feiten versus fabels



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Lifestyle Brain Interaction

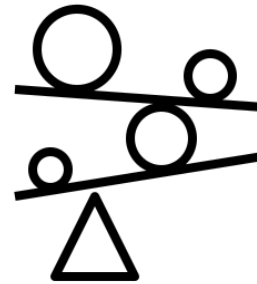
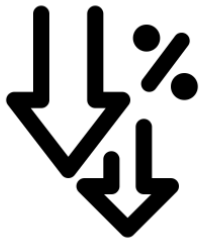
Is het veilig?



Geschiedenis



1921

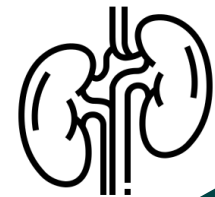
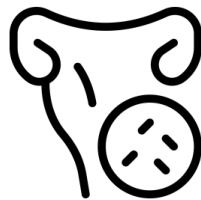
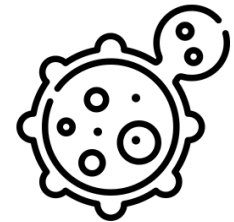
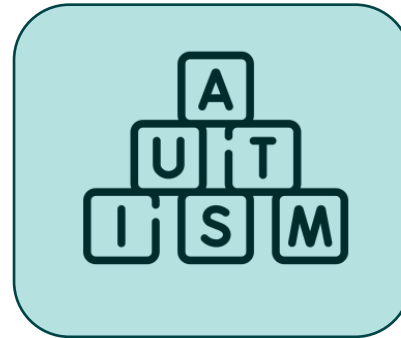


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Lifestyle Brain Interaction

Thema's



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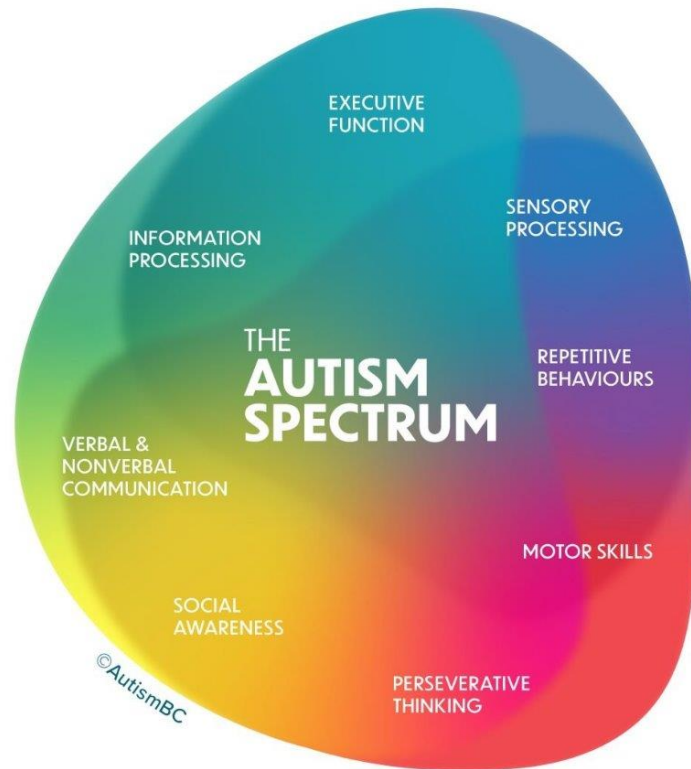
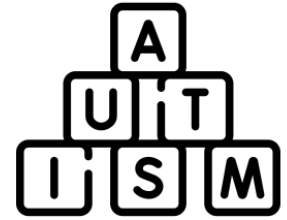
Lifestyle Brain Interaction



LBI

Lifestyle Brain Interaction

Autisme Spectrum Stoornis



- Neurologische Ontwikkelingsstoornis
- 1 per 100 kinderen wereldwijd
- Psychotherapie en context aanpassen
- Comorbiditeiten
- Genetische component

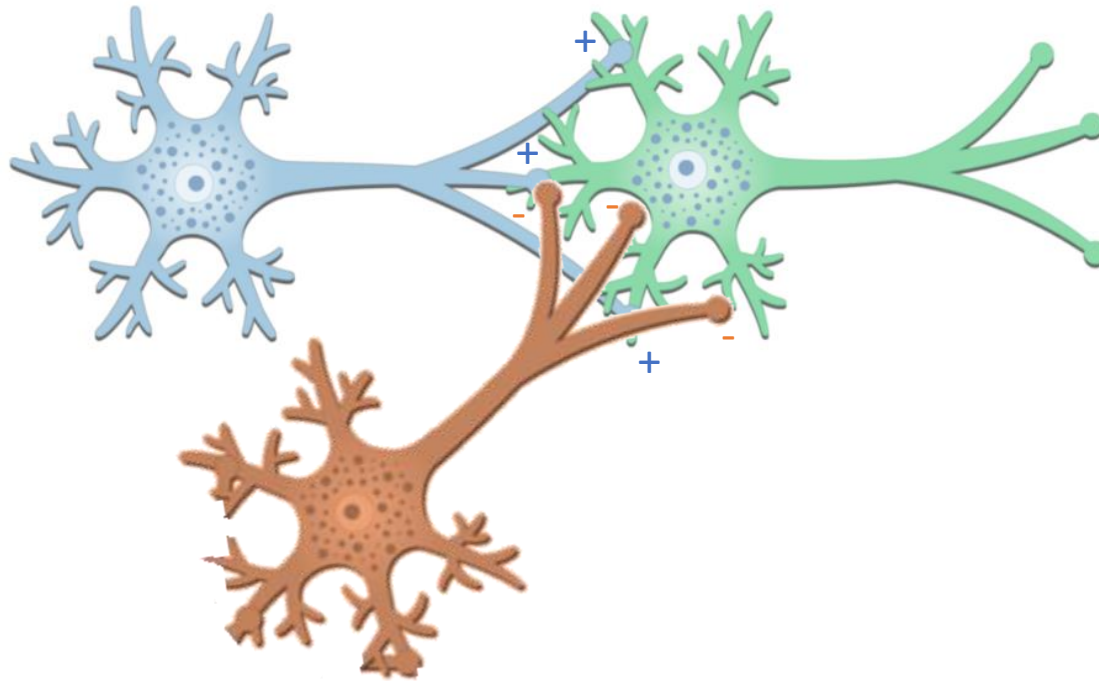
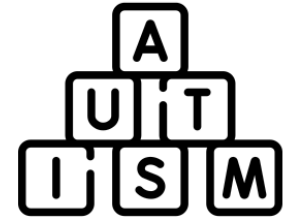


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1. Neurotransmitter balans

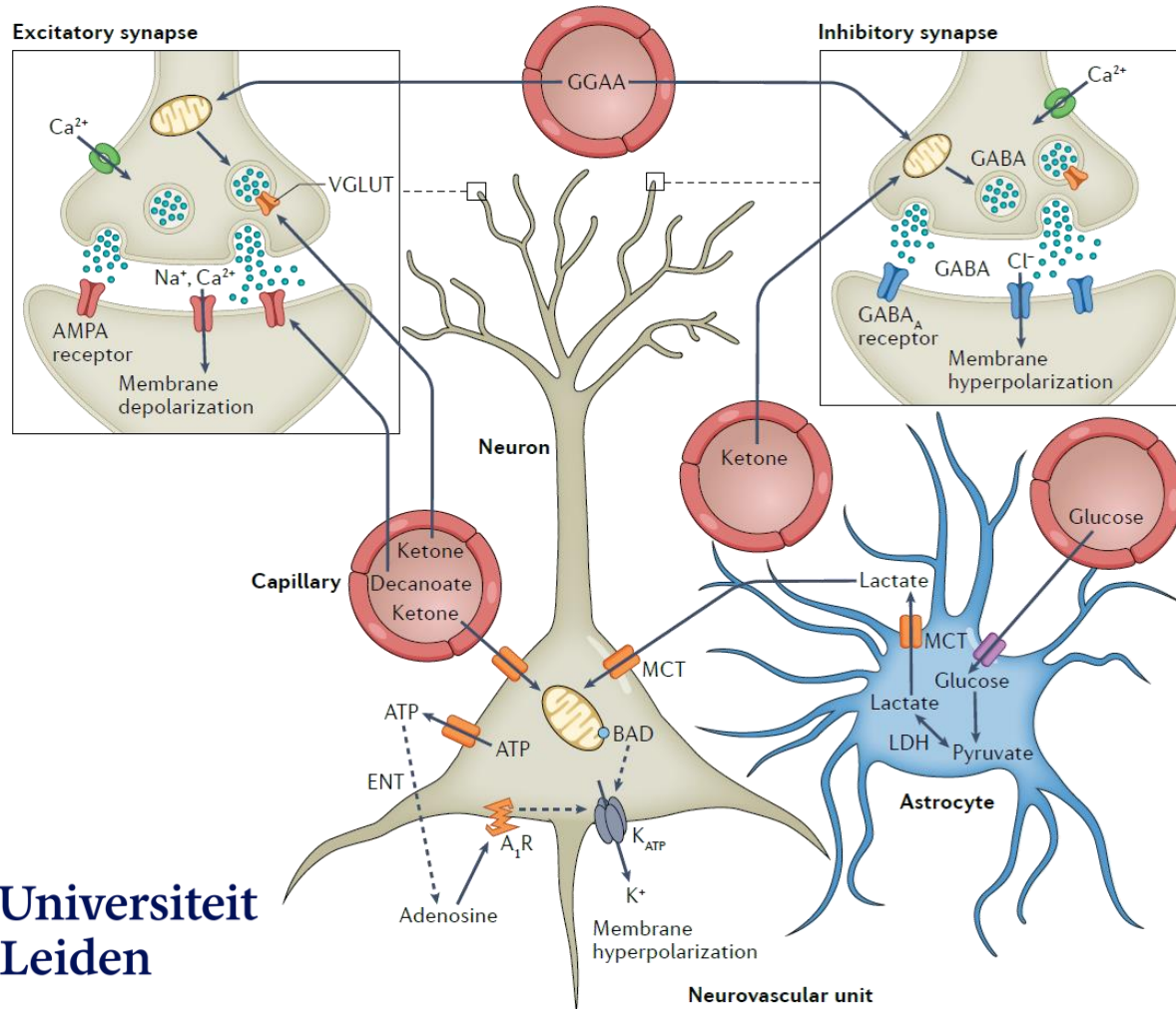
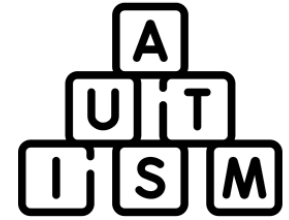


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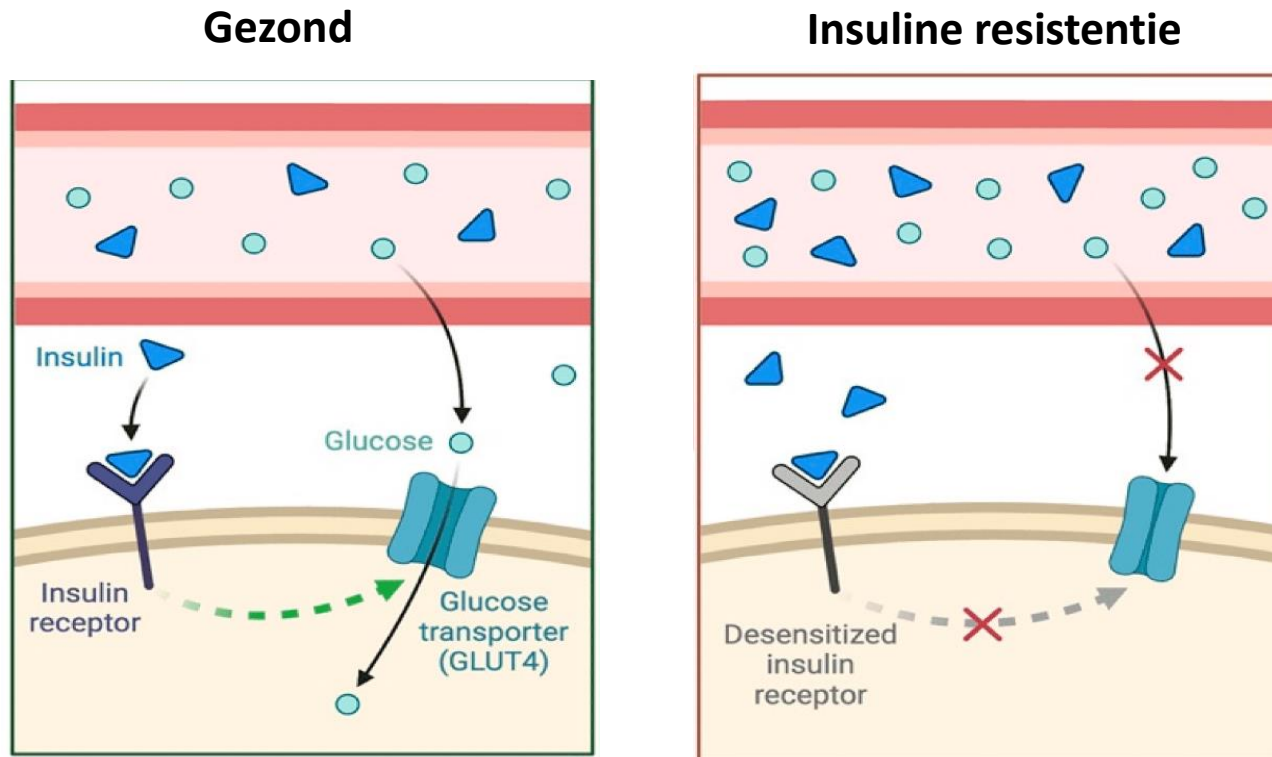
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1. Neurotransmitter balans



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2. Insuline resistentie



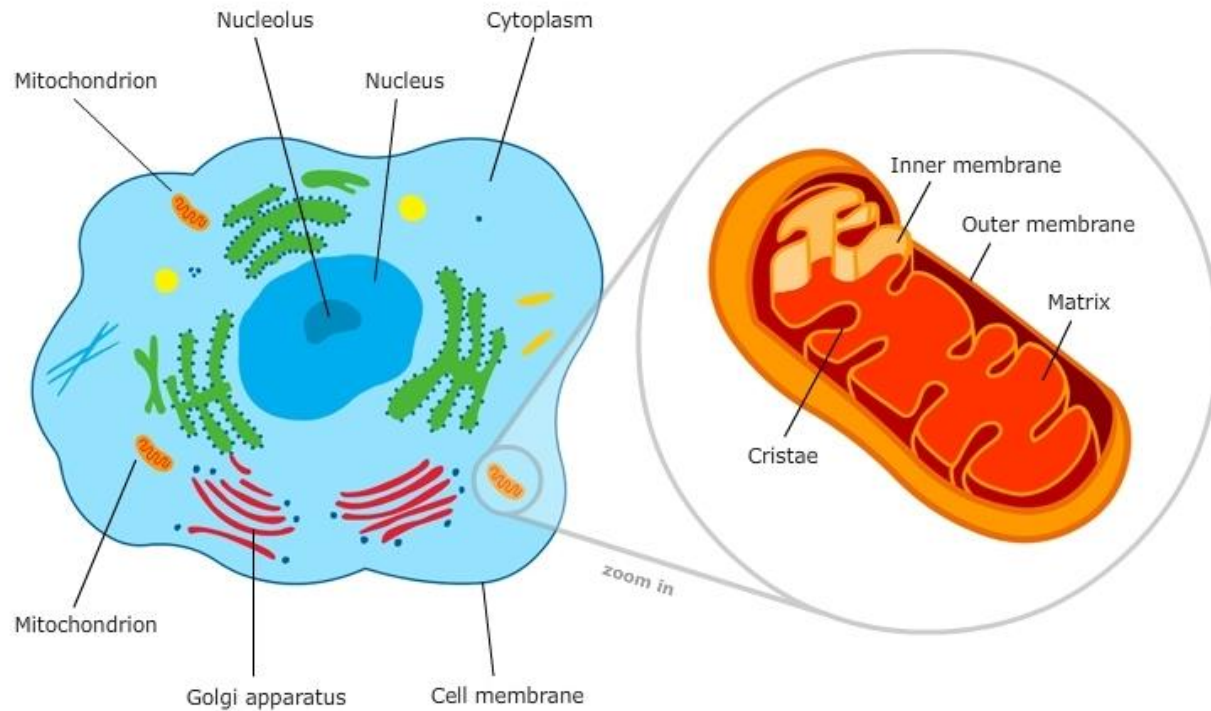
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Adapted from Calcaterra et al. 2022



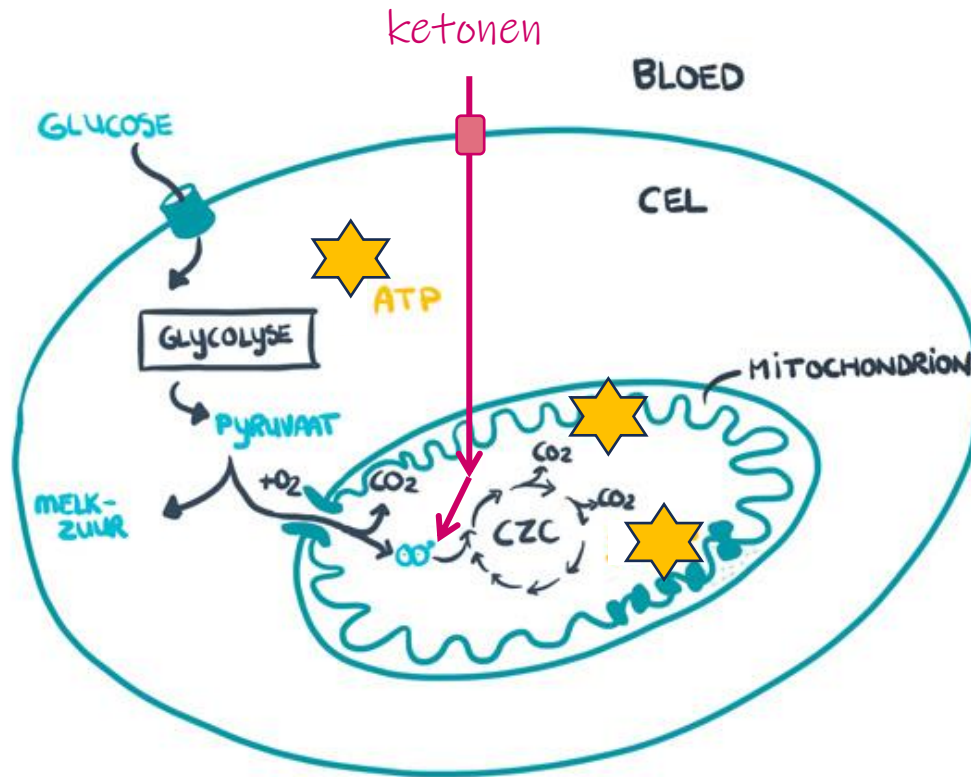
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3. Mitochondriale dysfunctie



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3. Mitochondriale dysfunctie



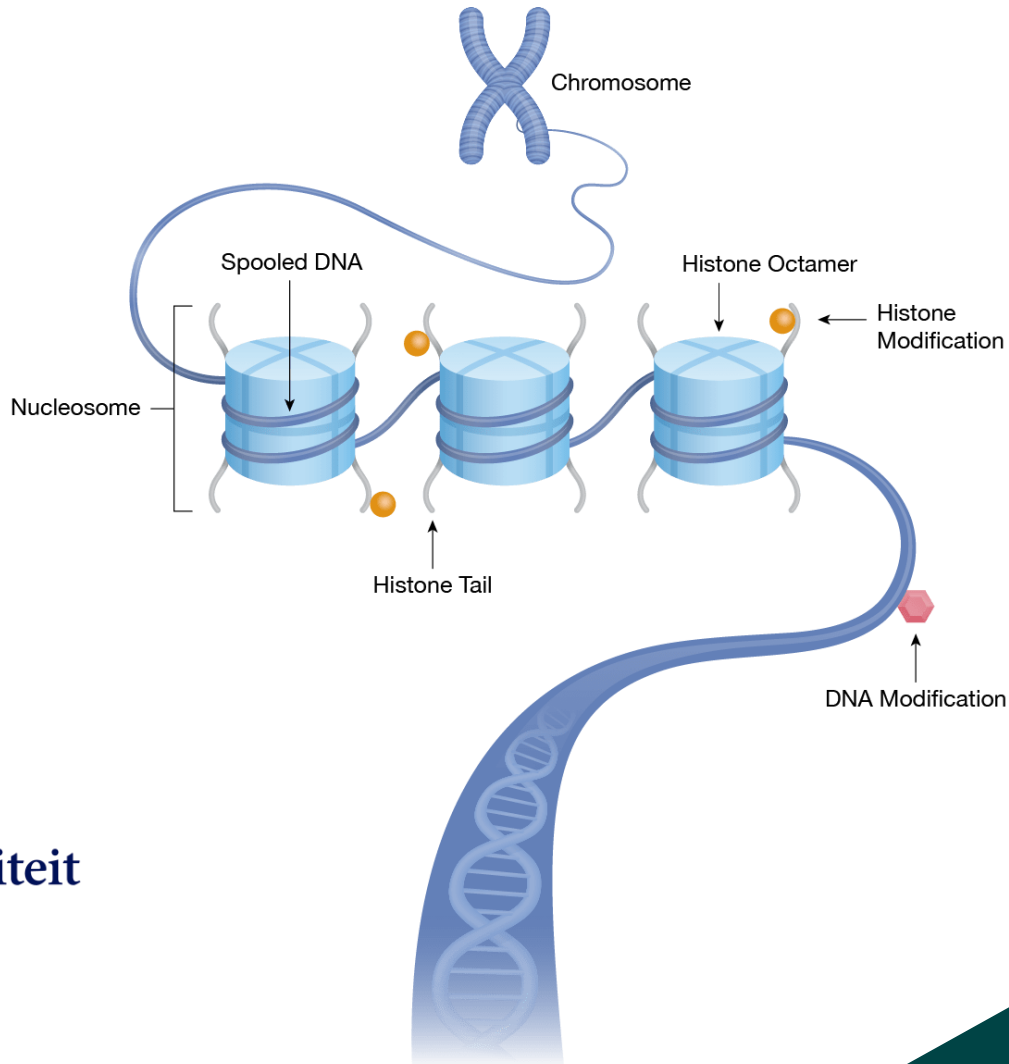
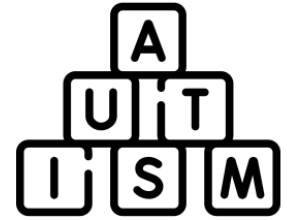
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Adapted from Moevanvermoeidheid.nl



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4. Epigenetische modificatie

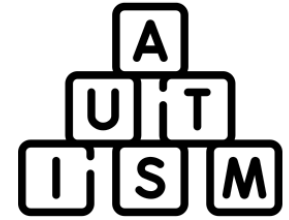


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4. Epigenetische modificatie

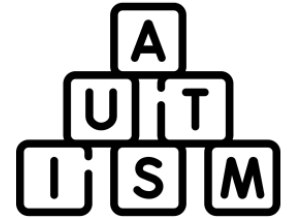


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Lifestyle Brain Interaction

Autisme Spectrum Stoornis



	Autisme	Ketogeen dieet
1	Verstoring neurotransmitter balans	Herstel neurotransmitter balans
2	Insuline resistentie	Herstel insuline sensitiviteit en alternatieve brandstof
3	Mitochondriale dysfunctie	Mitogenesis en omzeilen
4	(Epi)genetische componenten	Regulatie genexpressie via epigenetische modificatie

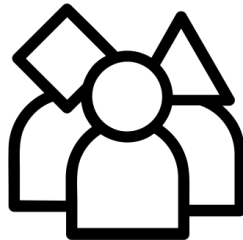
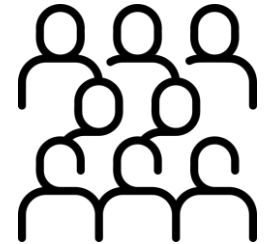
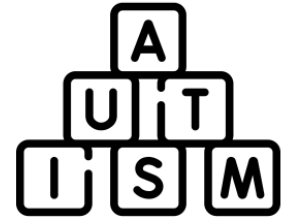


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Autisme Spectrum Stoornis



Vragen?

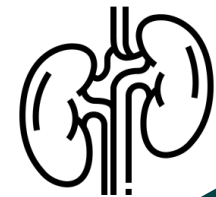
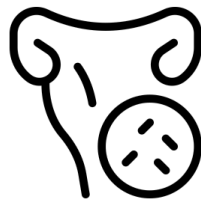
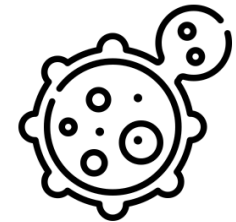
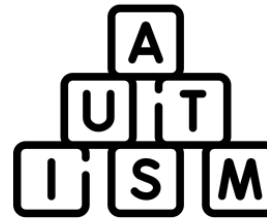


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Lifestyle Brain Interaction

Thema's



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Lifestyle Brain Interaction



LBI

Lifestyle Brain Interaction

Dementie



- 300.000 mensen in Nederland
- 1 op 5 mensen krijgen in hun leven dementie

Alzheimer

- Amyloid plaques en Tau tangles
- Geen behandeling
- Genetische component
- Leefstijl als risicofactor
- Correlatie met diabetes type 1 en 2
- Verlaagd glucosemetabolisme
- Post-mortem insuline



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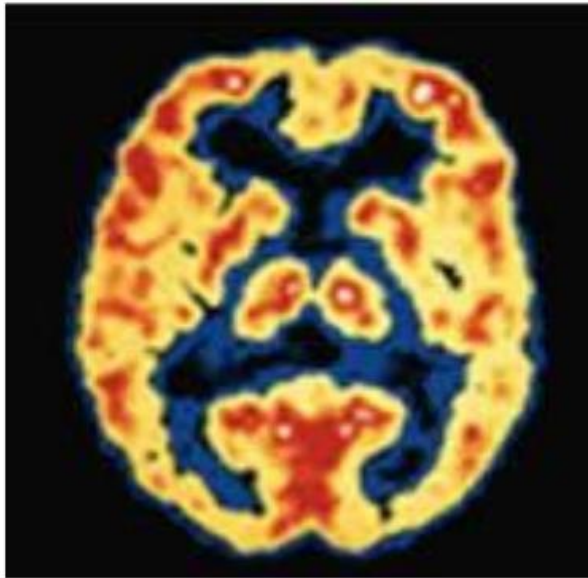


Lifestyle Brain Interaction

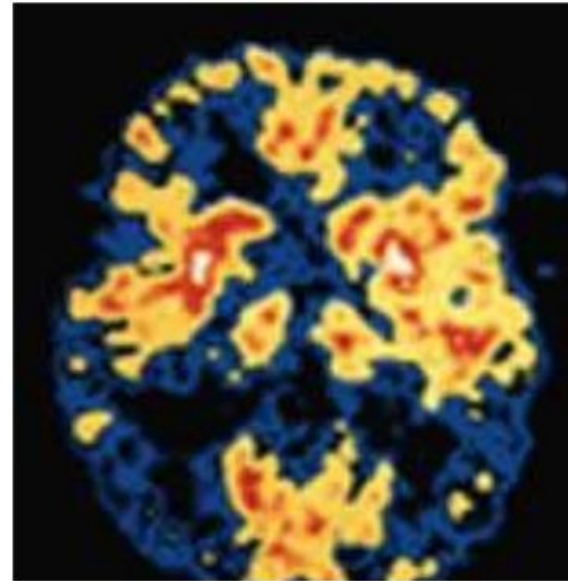
Diabetes type 3



Verlaagd glucosemetabolisme → Energiecrisis



Gezond



Alzheimer



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Diabetes type 3



Dr. Mary Newport
TED talk (2013)

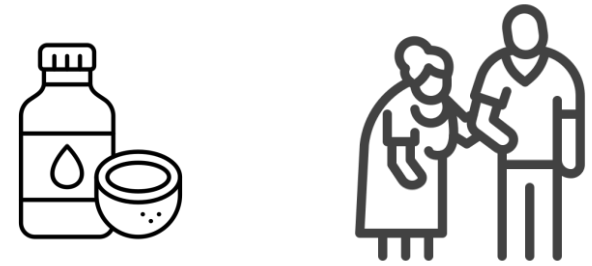


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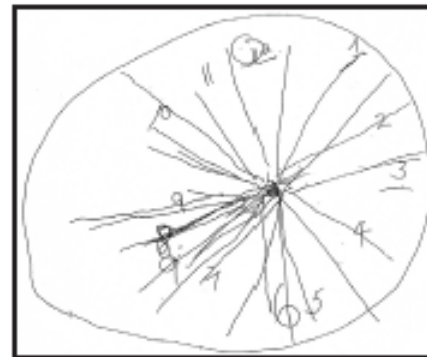


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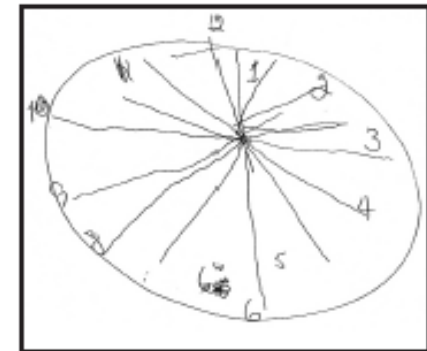
Diabetes type 3



Dag -1



Dag 14



Dag 37



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Newport 2008



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Diabetes type 3



Samenvatting: Energiecrisis !

Mogelijke oplossing: Alternatieve energiebron → Ketonen

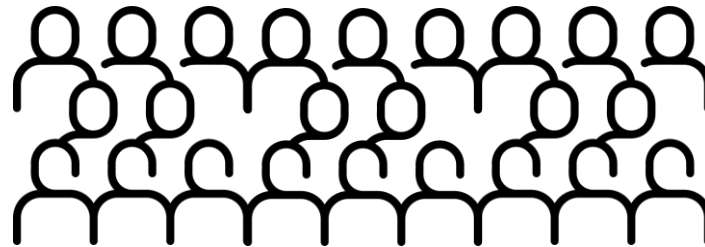


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Diabetes type 3



Vragen?

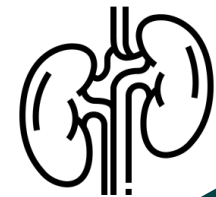
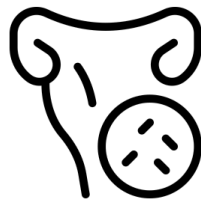
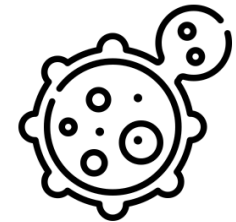
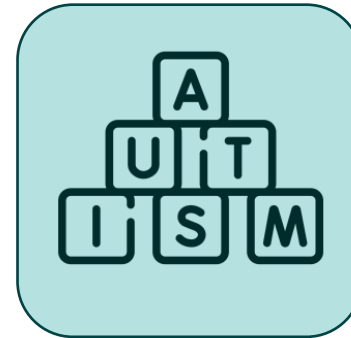


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Lifestyle Brain Interaction

Conclusie: er is hoop



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Lifestyle Brain Interaction

Ambitie

*Veilig implementeren
van wetenschappelijk **bewezen**
ketogene interventies ter bevordering van
mentale en neurologische gezondheid
in Nederland.*



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Lifestyle Brain Interaction

Drie pijlers van ons werk



ONDERZOEK



COMMUNICATIE



POLICY SHAPING



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Lifestyle Brain Interaction

LBI onderzoeksgroep



Dr. Eline Dekeyster
Assistant Professor
Head of the research group



Alexa Schrickel
Scientist



David Bezpalec
PhD researcher



Boray Kutlu
Master thesis



Nathalie van Vugt
Master thesis



Matthieu Ortscheit
Master thesis



René Tinz
Data analyst



Daisy Tulloch
Communications intern



Olivier de Winter
Research assistant

Samenwerkingen



JOLANDA SNEL
n e u r o p s y c h o l o o g



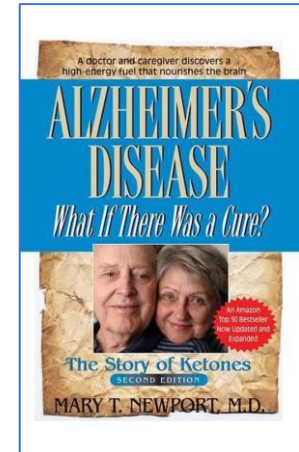
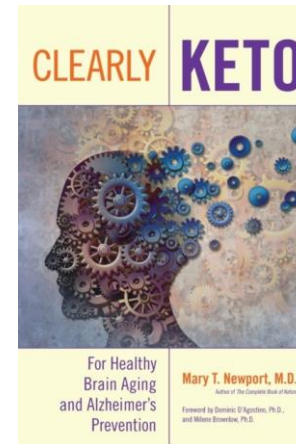
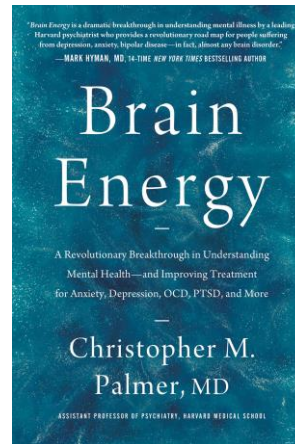
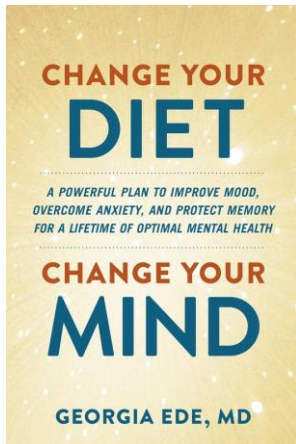
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www.LBIresearch.nl



Lifestyle Brain Interaction

Boeken



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Lifestyle Brain Interaction

Voeding voor het Brein

Een nieuwe visie op neurologische en mentale gezondheidszorg

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e.a.g.dekeyster@fsw.leidenuniv.nl



www.LBIresearch.nl



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