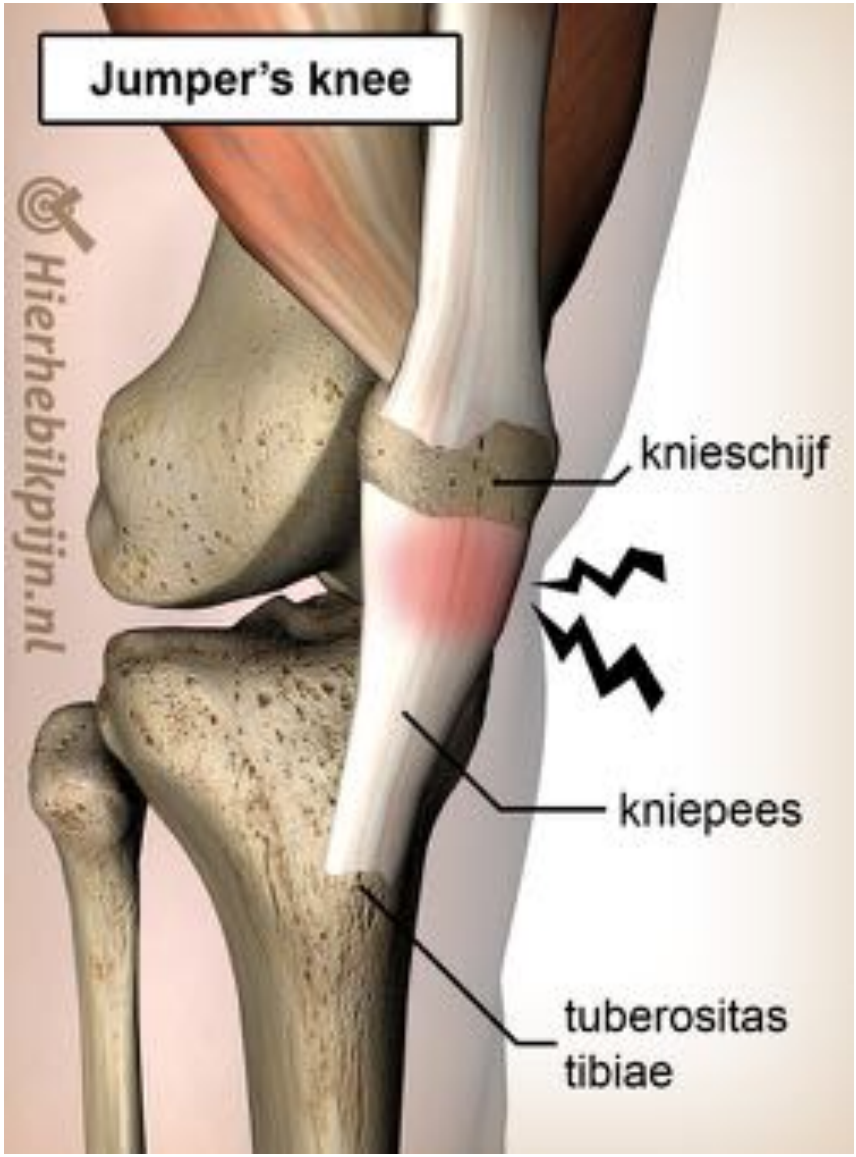
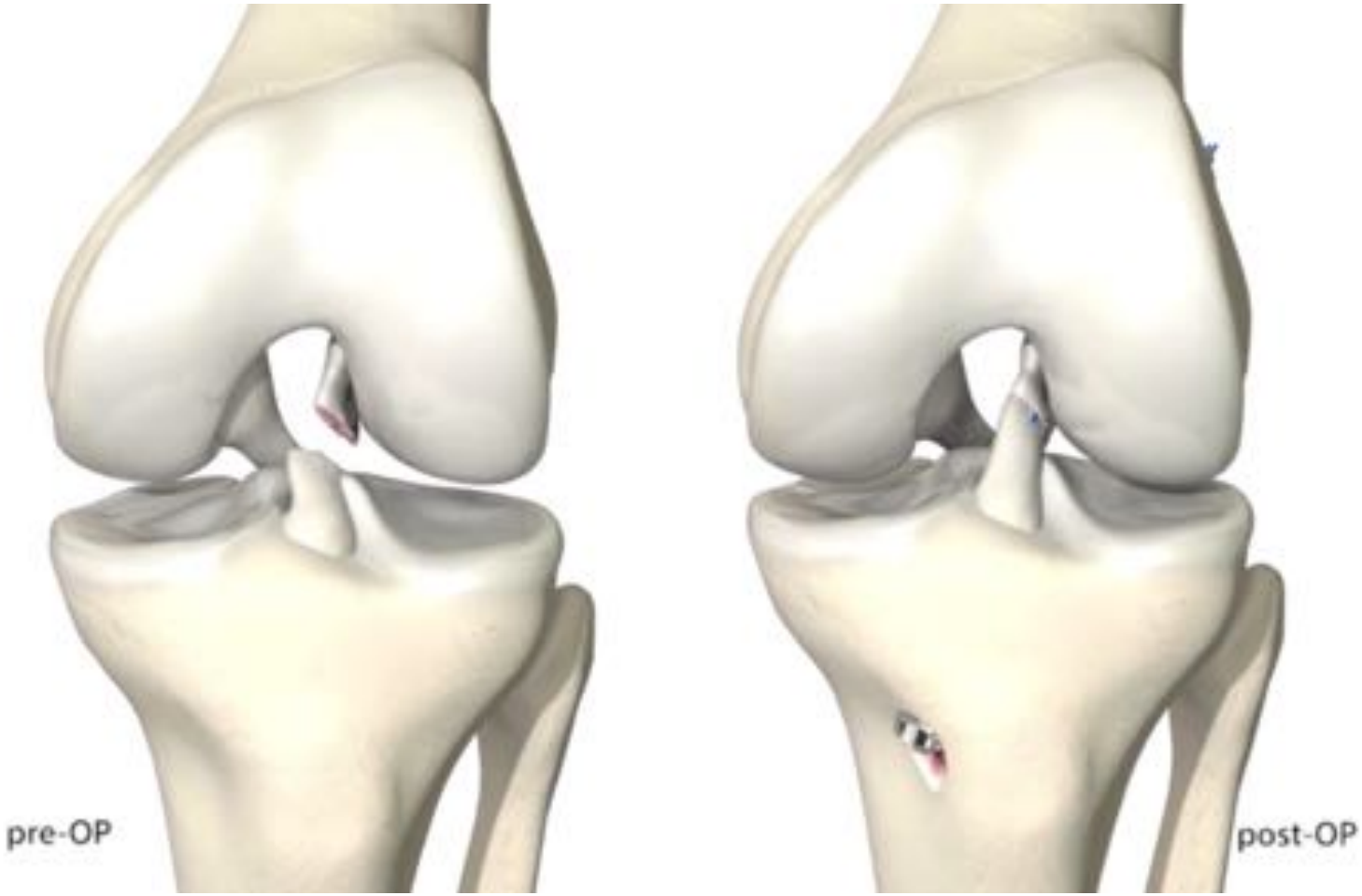
Is het nu een pees- of een botletsel:

Inzichten uit de klinische psycho-neuro-immunologie

De grootste risicofactor voor blessures
is onze LIFESTYLE.

#kennis
#adviezen
#verantwoordelijkheid


Jumper's knee
Hierhebikpijn.nl
knieschijf
kniepees
tuberositas
tibiae


pre-OP
post-OP

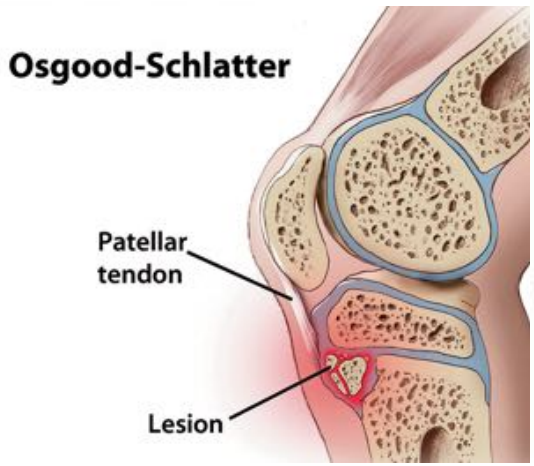

kPNI
BELGIUM

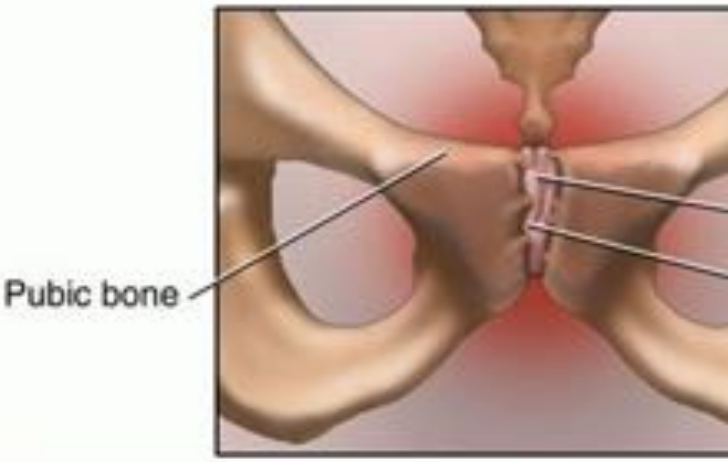
SEVER

OSGOOD

OSTEITIS

ARTHROSE



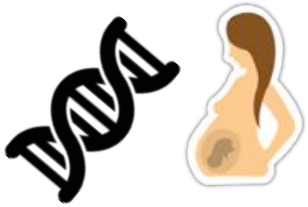


'Waarom Gabriel Batistuta na zijn carrière zijn benen wilde laten amputeren'

Binnen- en buitenlandse media berichten bijna dagelijks over voetballers met kraakbeenproblemen bij wie ondanks de beste medische zorgen een operatie niet vermeden kon worden. Therapeuten bijten er zich de tanden op stuk, maar er is hoop, zegt Thomas D'havé.


kPNI
BELGIUM

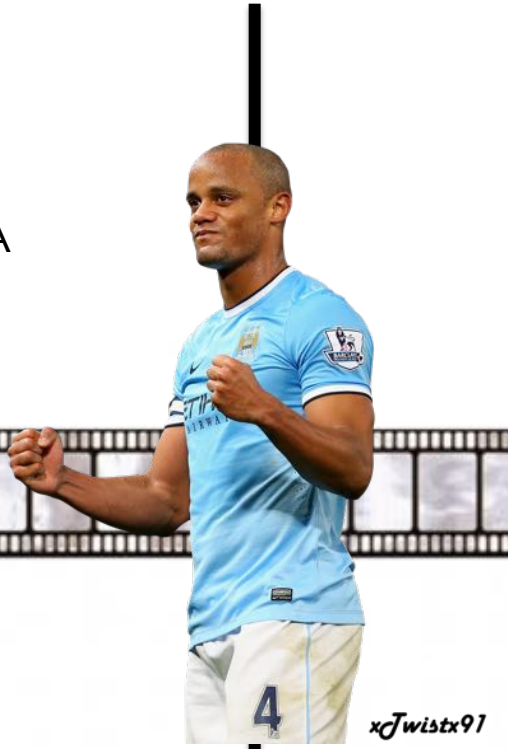
INJURY



(EPI) GENETIC
PROGRAMMING

RF2
SEDENTARISM

RF4
HEAD TRAUMA



RF1
MAMMALS / NEU5GC

RF3
BIORHYTHM

ZOVEELSTE **BLESSURE** HOUDT RODE DUIVEL WEER VOOR ONBEPAALDE TIJD AAN DE KANT

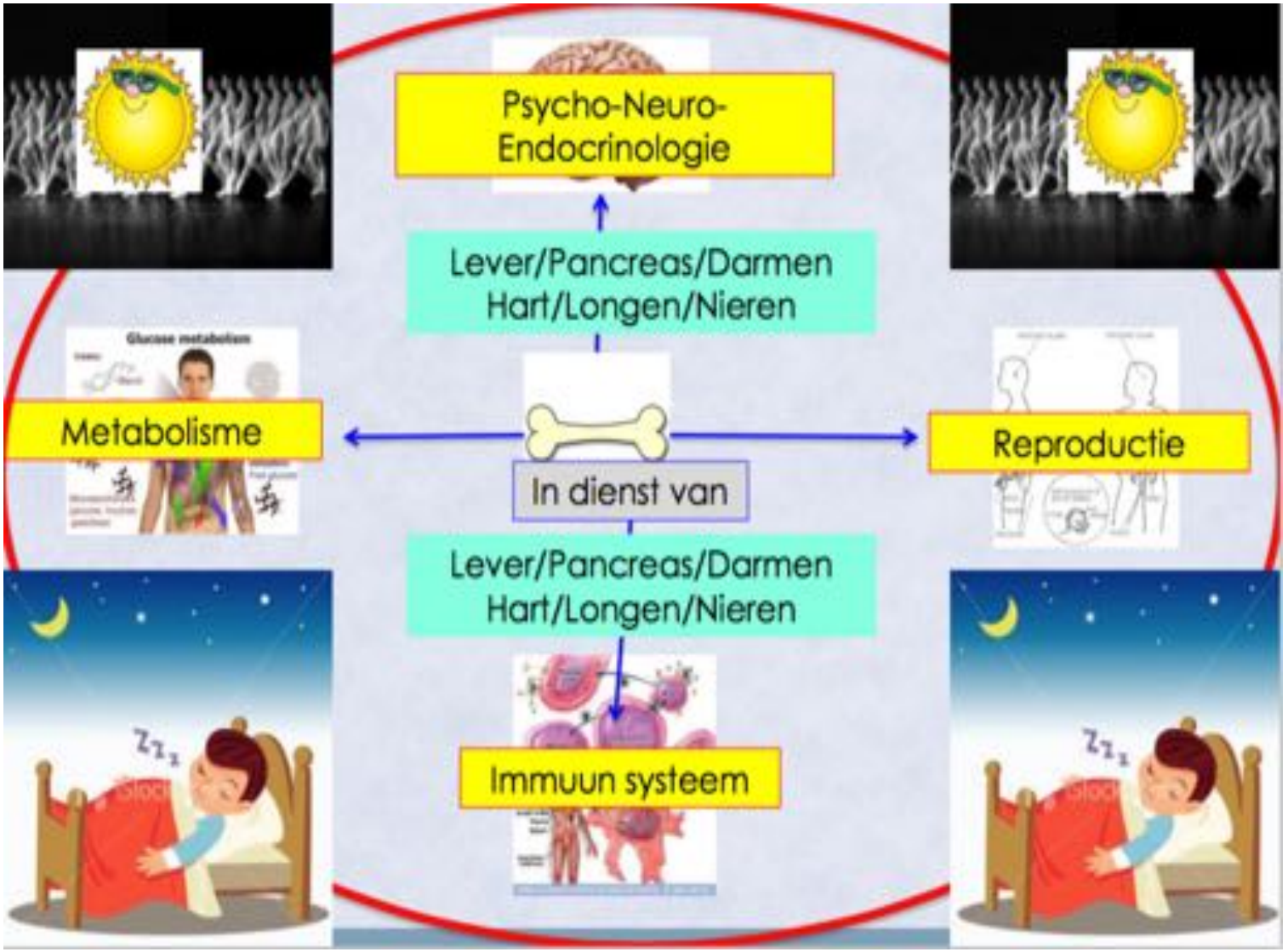
HET VINCENT KOMPANY-SYNDROOM

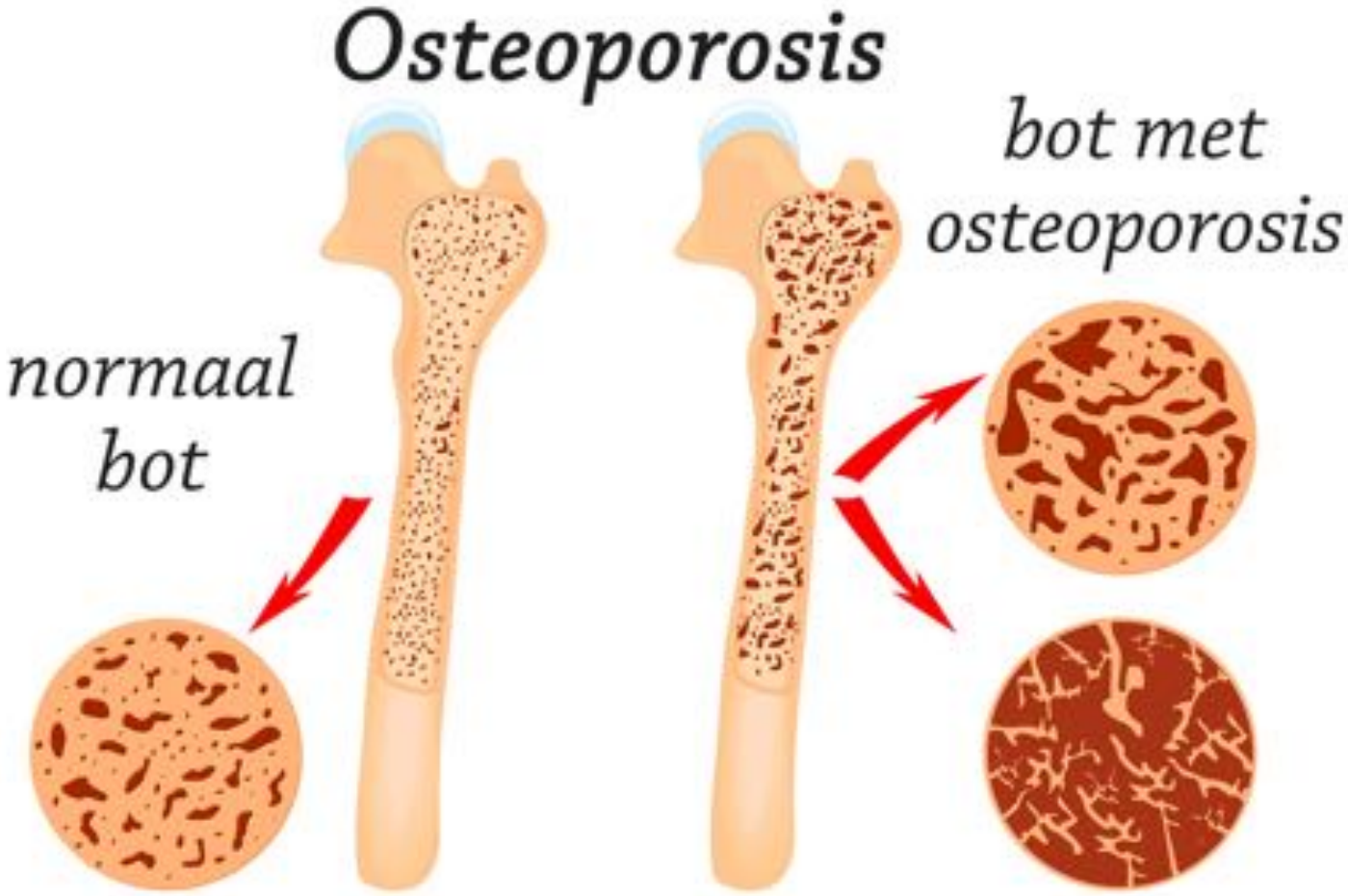
Nu heet het 'spiervermoeidheid in de lies', maar de vele spierblessures van Vincent Kompany lijken slechts symptomen van een veel dieperliggend lichamelijk probleem waar Manchester City al jaren tevergeefs naar zoekt. Komt het ooit nog goed met 'de man van glas'?

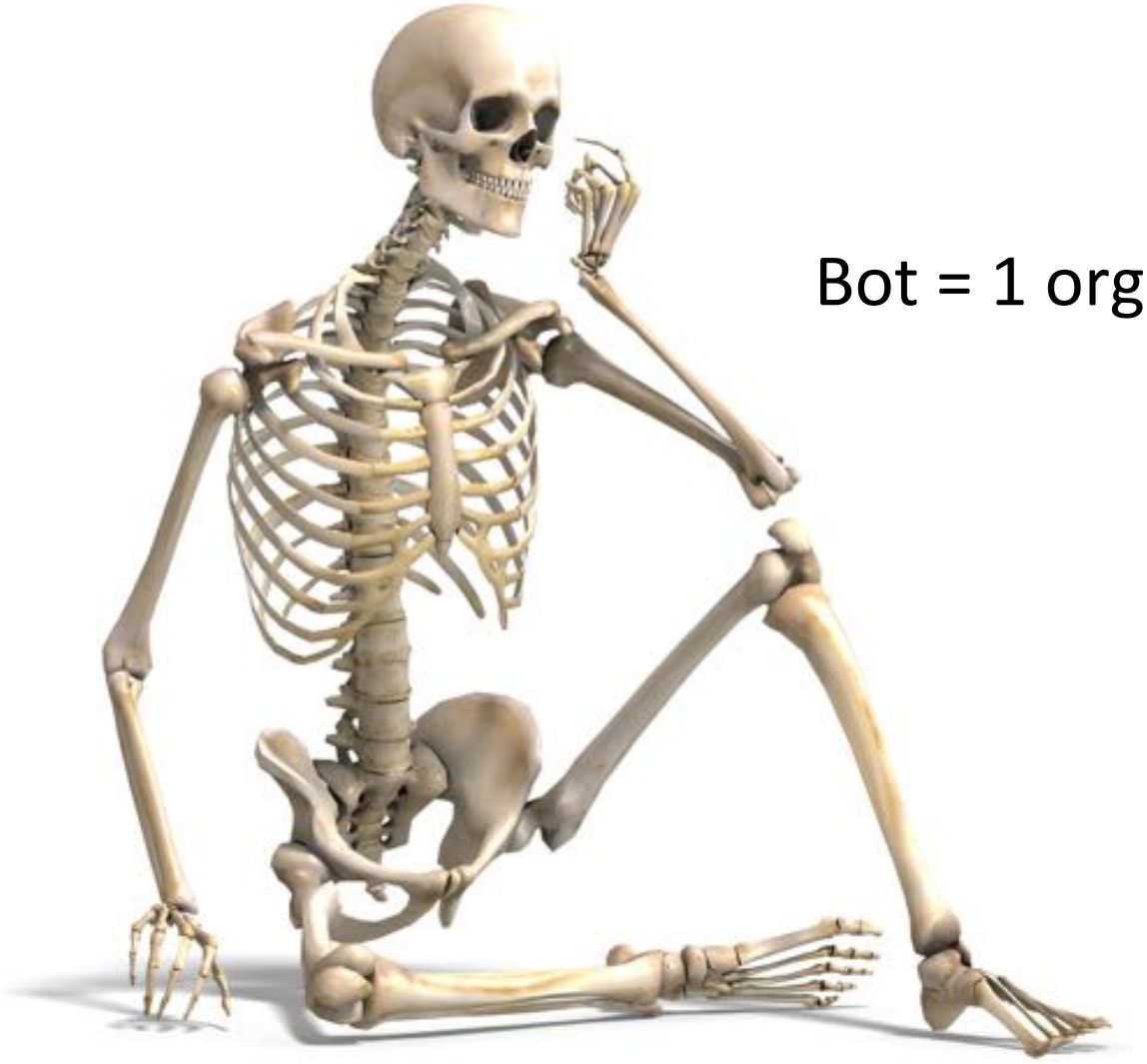
'We hebben het belang van de klinische immunologie in de topsport te lang over het hoofd gezien'

'Wat ik zeg, is geen rocket science. We moeten gewoon anders naar blessures leren kijken'

THOMAS D'HAVÉ
kPNI Belgium


Psycho-Neuro-
Endocrinologie
Lever/Pancreas/Darmen
Hart/Longen/Nieren
Metabolisme
Reproductie
In dienst van
Lever/Pancreas/Darmen
Hart/Longen/Nieren
Immuun systeem


Osteoporosis
normaal bot
bot met osteoporosis



Bot = 1 orgaan

DISPOSABLE BONES

Botten offeren zichzelf op voor het lichaam.

Bij (vroege) botproblematiek:
Wat is er achter de schermen aan de hand?


Toeval is
logisch


In the absence of trauma, the body deteriorates from the inside out.
(A. Rakowski)

Verstoorde werkingsmechanismes

1. Botten hebben een dag-nacht ritme
2. Botten bufferen de bloedsuikerspiegel
3. …

Botten produceren **osteocalcine** in een RITME

1. Gecarboxyleerd (NACHT – BOTOPBOUW)
2. Gedecarboxyleerd (DAG –BOTAFBRAAK)

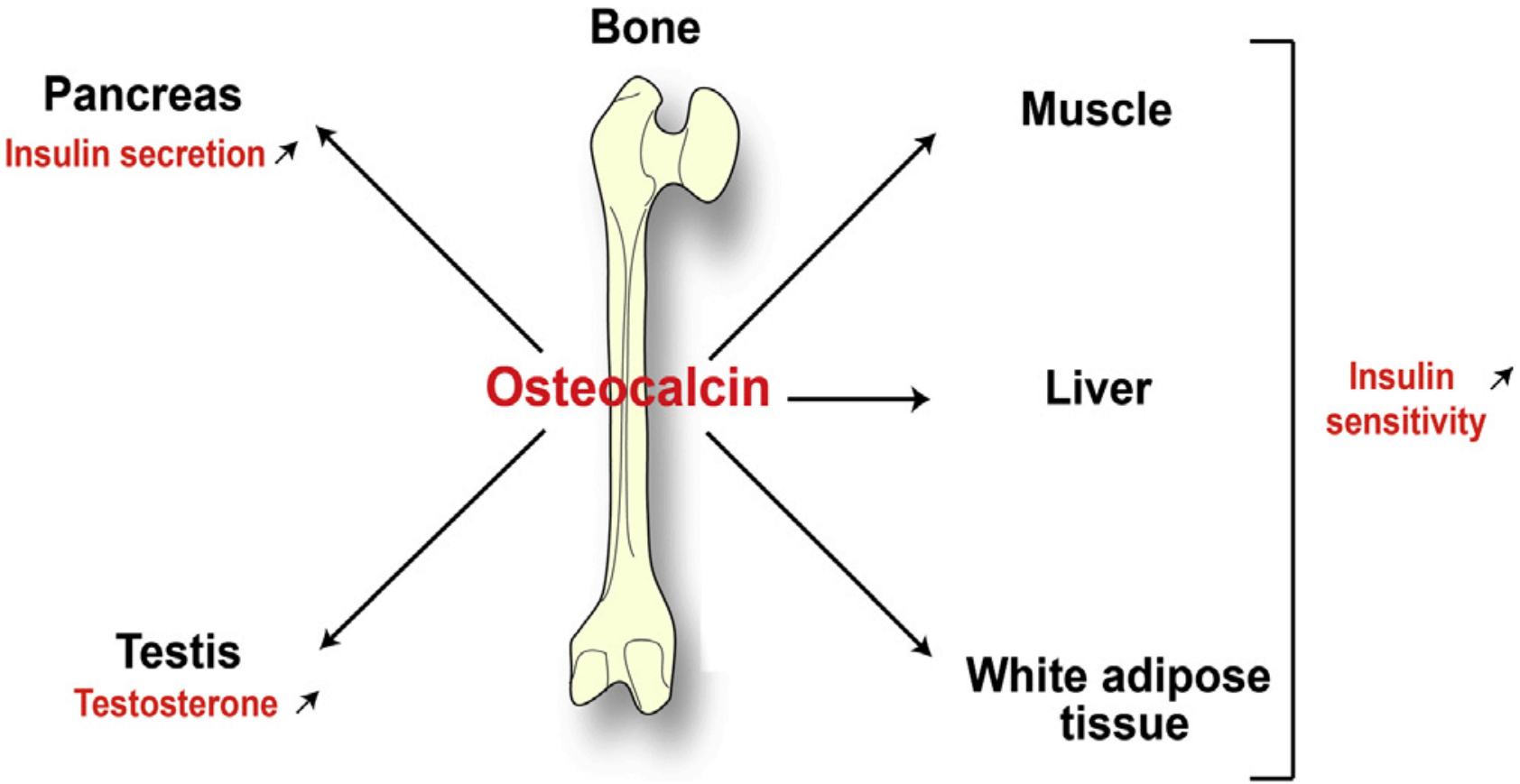
*"**Carboxylated osteocalcin** (Gla-OC) participates in **bone remodelin**g, whereas the **undercarboxylated form** (Glu-OC) takes part in **energy metabolism**. "*

Carboxylated and uncarboxylated osteocalcin in metabolic complications of human obesity and prediabetes; Razny; Diabetes Metab Res; **2017**

Ge**de**carboxyleerd Osteocalcine (BOTAFBRAAK)

1. Tijdens de dag
2. In dienst van het lichaam en hersenen

(productie van insuline, insulinereceptoren, voortplantingshormoon, neuroneogenese etc)


Bone
Pancreas
Insulin secretion
Muscle
Osteocalcin
Liver
Insulin sensitivity
Testis
Testosterone
White adipose tissue

Neth J Med. 2013 Oct;71(8):396-400.

Bone as a regulator of glucose metabolism.

Veldhuis-Vlug AG[1], Fliers E, Bisschop PH.

⊕ Author information

Abstract

For a long time the only functions attributed to the skeleton were locomotion and calcium storage. Over the last decade, this view has changed. Genetic studies in mice have shown that bone metabolism is regulated by the autonomic nervous system and interacts with energy metabolism and reproduction. Osteocalcin, one of the main organic ingredients of the bone matrix, was discovered to stimulate insulin production by the pancreas, as well as energy expenditure and insulin sensitivity. Administration of recombinant osteocalcin to mice on a high fat diet decreased weight gain and insulin resistance. These unanticipated results stimulated studies on osteocalcin and glucose metabolism in humans. This review will discuss these clinical studies and their perspective for the future.

Arch Biochem Biophys. 2014 Nov 1;561:137-46. doi: 10.1016/j.abb.2014.05.022. Epub 2014 Jun 2.

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Ferron M[1], Lacombe J[2].

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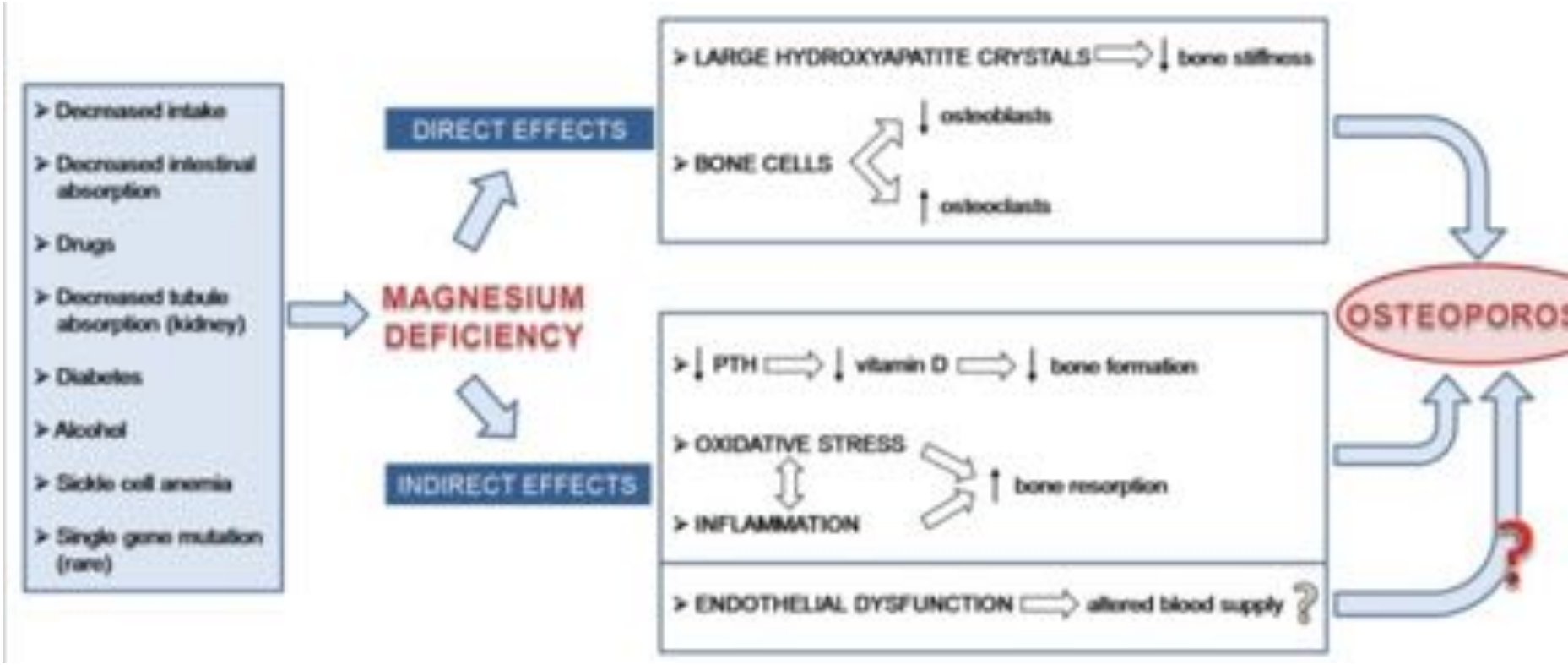
The skeleton has recently emerged as an endocrine organ implicated in the regulation of glucose and energy metabolism. This function of bone is mediated, at least in part, by osteocalcin, an osteoblast-derived protein acting as a hormone stimulating insulin sensitivity, insulin secretion and energy expenditure. Osteocalcin secretion and bioactivity is in turn regulated by several hormonal cues including insulin, leptin, the sympathetic nervous system and glucocorticoids. Recent findings support the notion that osteocalcin functions and regulations are conserved between mice and humans. Moreover, studies in mice suggest that osteocalcin could represent a viable therapeutic approach for the treatment of obesity and insulin resistance. In this review, we summarize the current knowledge on osteocalcin functions, its various modes of action and the mechanisms implicated in the control of this hormone.

Gecarboxyleerd Osteocalcine (BOTOPBOUW)

1. Magnesium afhankelijk (hydroxie-apatiet)
2. Nacht (melatonine)
3. Vit K afhankelijk (microbiome)

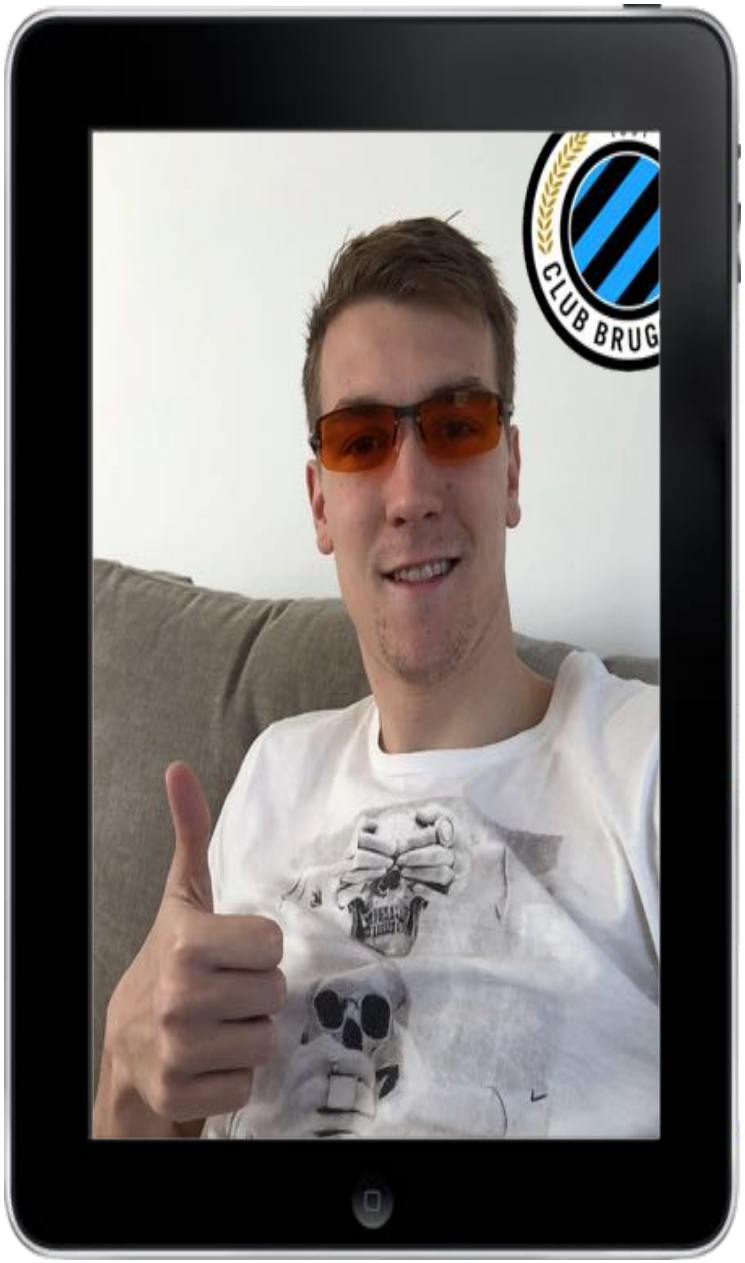
Optimizing Mg intake represent an effective and low-cost preventive measure against osteoporosis.

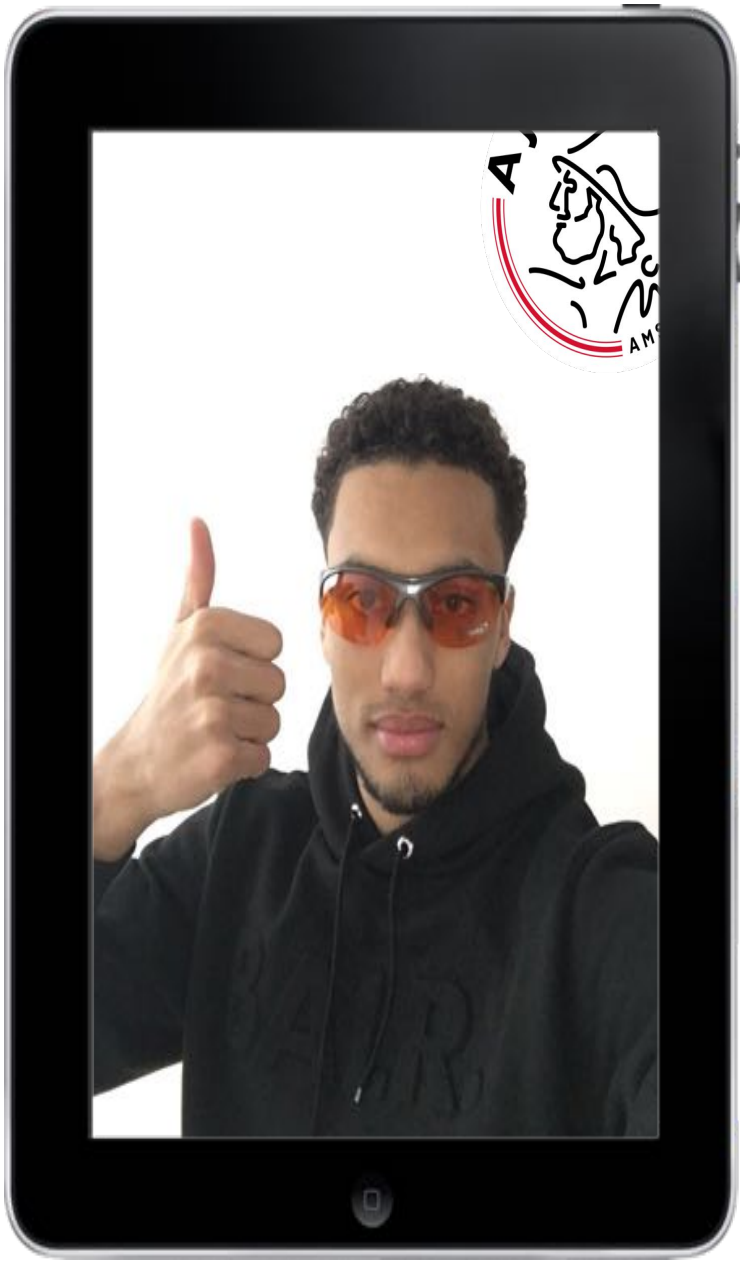


Magnesium and Osteoporosis: Current State of Knowledge and Future Research Directions; Castiglioni; Nutrients; 2013

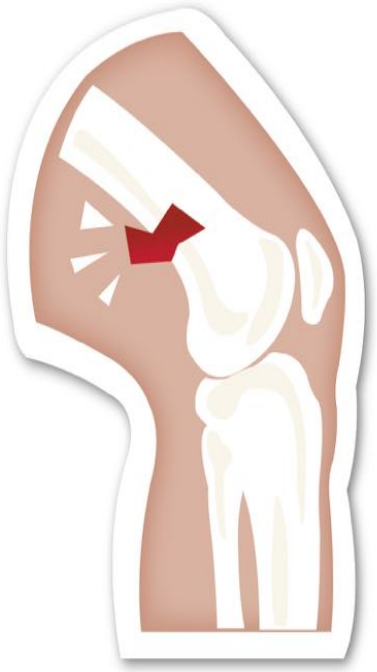
12

BODY


CLUB BRUG

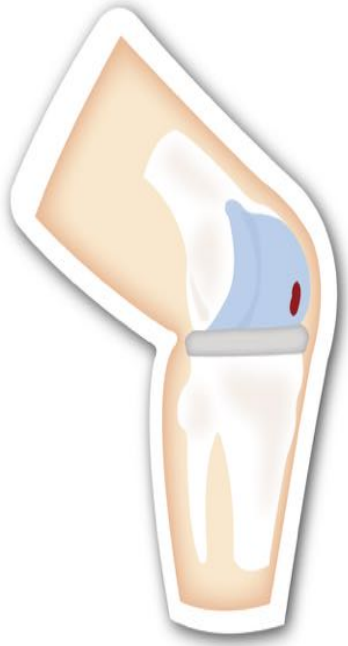


Absence/shortage of Melatonin predisposes bone injuries.



Nightshift work and fracture risk: the Nurses' Health study; Osteoporosis Int.; 2009; Feskanich D.

Melatonin enhances differentiation of human mesenchymal stem cells



Melatonin enhances chondrogenic differentiation of human mesenchymal stem cells; J Pineal Res.; 2014; Gao W.

Synoviale gewrichten:
28 VitK2 producerende stammen


AFCA
IRSCA

Wat als ritme chronisch verstoord is

GECARBOXYLEERD < GEDECARBOXYLEERD

>> BOTPROBLEMATIEK

Verstoorde werkingsmechanisme

1. Botten hebben een dag-nacht ritme
2. Botten bufferen de bloedsuikerspiegel
3. …

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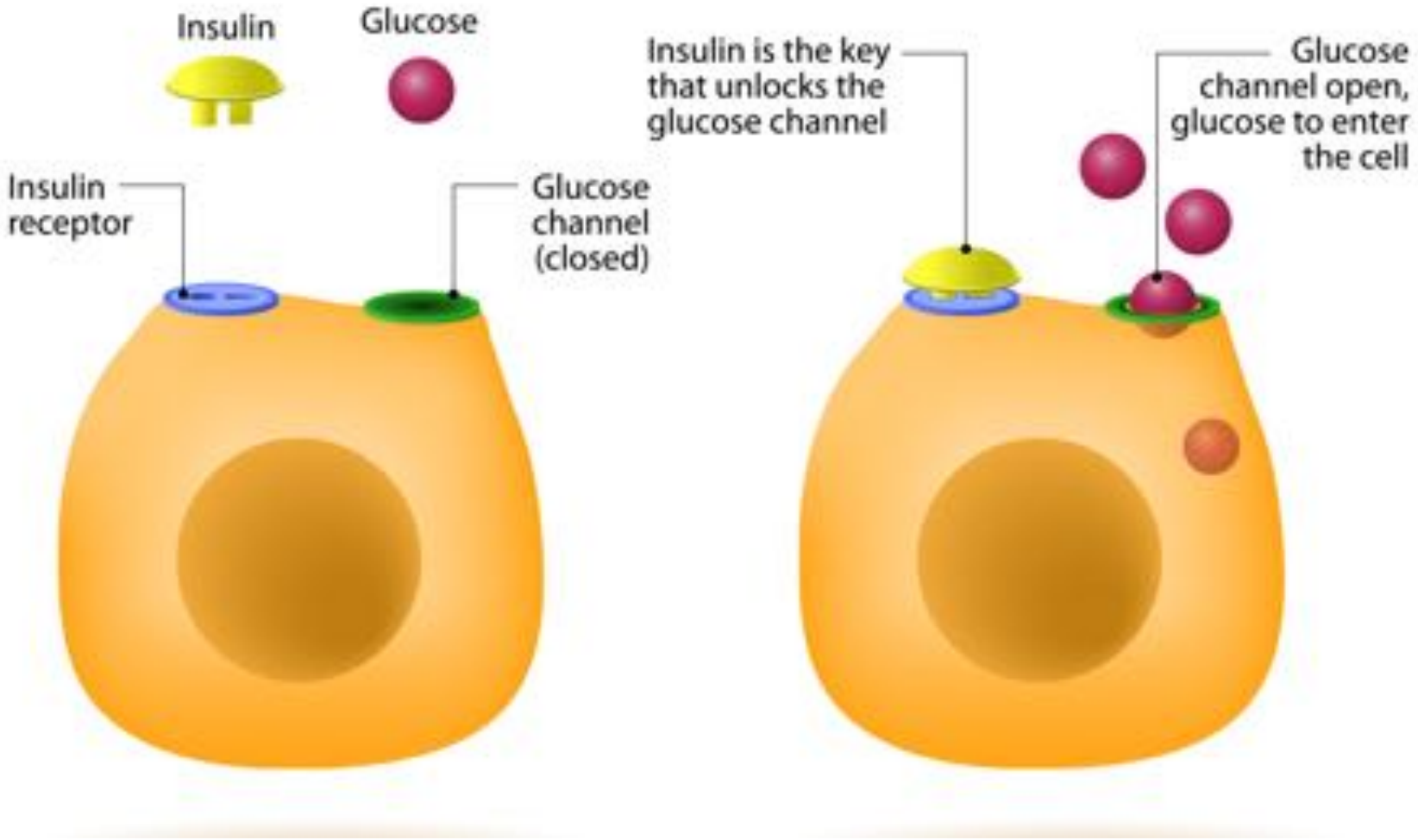
HOW DOES INSULIN WORK?



Since **osteocytes** can **sense** the **mechanical loading** imposed on bone,
is it possible that skeleton can **“feel”**
the subtle **variations of glucose leve**l in the surrounding milieu?

Osteoblasts receive signals from endocrine organs
during chronic hyperglycemia and insulin resistance. “

Regulation of glucose handling by skeleton: insights from mouse and human studies; Liu;
Am Diabetes Ass; 2016

RESEARCH IN ELITE FOOTBALL

30% pre-diabetes.

(Although this does not yet show in the blood glucose levels)

Glucose rarely positive because all within reference range value…

Height (cm)	Weight (kg)	C-Peptide (ug/L)	Insulin (pmol/L)	Glucose (mmol/L)	HOMA 1	B-cell %	IS %
195	91,3	1,2	24,4	4,4	0.4	72	225
191	92,1	0,68	12,8	4,5	0.1	61	272
174,5	74	1,06	22,2	3,9	0.4	78	256
188	93,2	1,26	25	4,6	0.5	67	217
181,5	77,9	0,86	18,1	3,8	0.4	86	286
170,2	80,1	3,32	187,3	5,3	3.4	199	29
196,5	88,6	1,31	31,5	5,6	0.6	53	164
173,7	71,8	1,25	19,2	4,1	0.3	70	277
176	75	1,19	22,7	5	0.4	53	233
190,8	94,6	2,09	53,2	4,4	1.0	122	104
185	77,9	2,51	83,4	5,9	1.6	93	62
182	76,4	1,3	24,7	4,5	0.5	70	221
182,5	81,1	0,81	16,6	4,9	0.3	51	266
190	88,8	1,39	34,4	4,8	0.6	76	156
181	80,2	1,37	36,1	5,5	0.7	60	142
195,5	93,5	1,41	26,4	5,1	0.5	56	200
185,4	83,3	1,65	39,9	4,6	0.7	92	136
186	83,4	1,56	44,1	4,8	0.8	90	122
174	75,7	1,56	39,4	4,3	0.7	105	140
191	93	1,73	60,6	4,3	1.1	140	92
186,5	80,9	1,42	40,1	4,5	0.7	97	136
190,2	78,8	2,05	72,4	4,2	1.3	165	78
176,5	76,4						
177,5	72	1,5	49,2	4,7	0.9	102	110
177,5	84	1,63	87,7	4,1	1.6	188	64

6.1 = UPPER LIMIT

HOMA > 0.8 = prediabetes

Height (cm)	Weight (kg)	C-Peptide (ug/L)	Insulin (pmol/L)	Glucose (mmol/L)	HOMA 1	B-cell %	IS %
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191	92,1	0,68	12,8	4,5	0.1	61	272
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177,5	72	1,5	49,2	4,7	0.9	102	110
177,5	84	1,63	87,7	4,1	1.6	188	64

B-cell activity: the lower, the better

Height (cm)	Weight (kg)	C-Peptide (ug/L)	Insulin (pmol/L)	Glucose (mmol/L)	HOMA 1	B-cell %	IS %
195	91,3	1,2	24,4	4,4	0.4	72	225
191	92,1	0,68	12,8	4,5	0.1	61	272
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177,5	72	1,5	49,2	4,7	0.9	102	110
177,5	84	1,63	87,7	4,1	1.6	188	64

How much does the pancreas need to work to get the glucose levels under control?

Insulin Sensitivity: the higher, the better

Height (cm)	Weight (kg)	C-Peptide (ug/L)	Insulin (pmol/L)	Glucose (mmol/L)	HOMA 1	B-cell %	IS %
195	91,3	1,2	24,4	4,4	0.4	72	225
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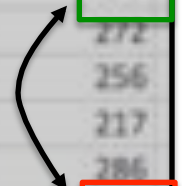
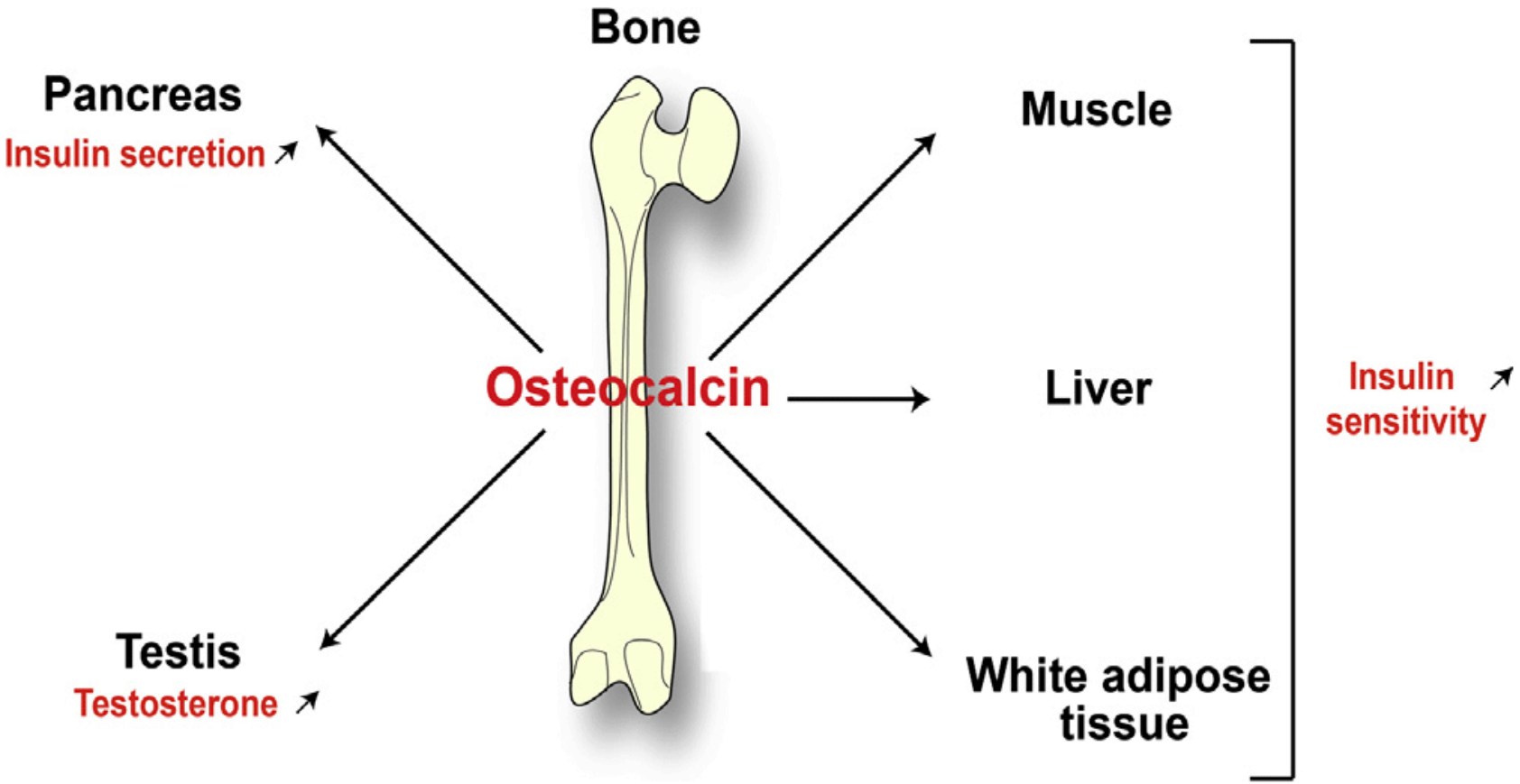


High score means: insulin finds the receptor very well (=absence of insulin resistance)


Bone
Pancreas
Insulin secretion
Muscle
Osteocalcin
Liver
Insulin sensitivity
Testis
Testosterone
White adipose tissue

Type 2 diabetes predicts the development of severe OA independent of age and BMI.

Our findings strengthen the concept of a strong **metabolic component** in the pathogenesis of OA.

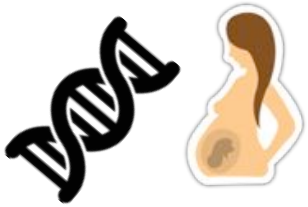
Diabetes is an independent predictor for severe osteoarthritis: results from a longitudinal cohort study; Schett; Diabetes Care; 2013

Risk factors related to metabolic syndrome

1) Sedentary death syndrome
2) Biorhythm
3) Neu5GC consumption
4) Meal frequency
5) Gingivitis


kPNI
BELGIUM

INJURY



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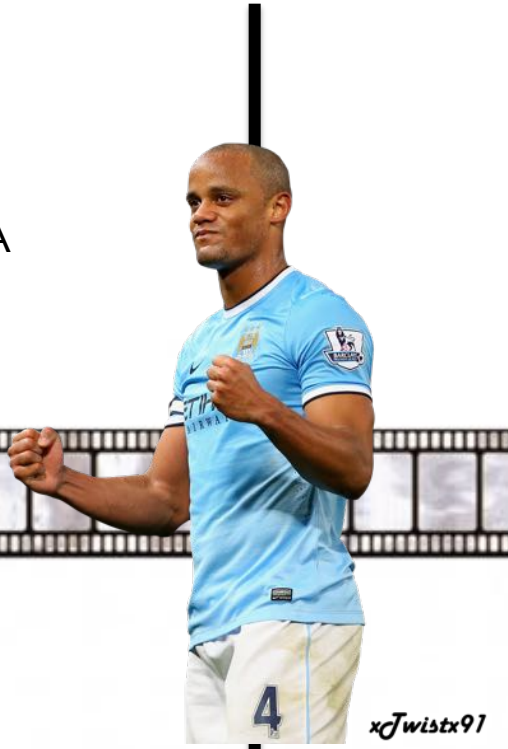
RF4
HEAD TRAUMA



RF1
MAMMALS / NEU5GC

RF3
BIORHYTHM

Conclusie:

Verstoorde werkingsmechanisme

1. Botten hebben een dag-nacht ritme (melatonine – magnesium – VitK)
2. Botten bufferen de bloedsuikerspiegel (lifestyle)
3. …. Peter Res (eiwit, collageen,…)

De grootste risicofactor voor blessures
is onze LIFESTYLE.

#kennis
#adviezen
#verantwoordelijkheid

Thomas D’havé

The Symptom is Never the Problem

osteopathy + clinical psycho-neuro-immunology in footbal

Altijd op zoek naar de oorzaken van chronische of recidiverende letsels

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