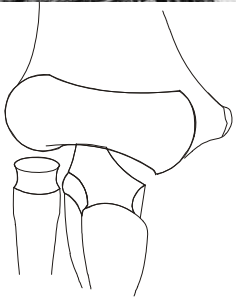
DAM CURSUS

Nascholing voor fysiotherapeuten

DAM CURSUS



oorcollege functionele morfologie (20.00-22.00 uur)

houd:

oppeling van spierlengte en spierkracht. De spierverkorting als zinvolle functionele anpassing. De non-sense van het spierrekken.

elfstudie

eader:

eperkt bewegen en adaptatie van spierweefsel

daptatie van spierweefsel bij jong en oud.

Download hier het cursusmateriaal van cursusavond 1

ollege algemene kinematica

Handout van het college	Downloaden
Bekijk de dia-presentatie online	Openen
Artikel: bewegen is relatief	Downloaden

ollege functionele morfologie spieren

Handout van het college	Downloaden
Bekijk de dia-presentatie online	Openen
Artikel: adaptatie spierweefsel	Downloaden
Artikel: adaptatie jong en oud	Downloaden

DE HAAGSE HOGESCHOOL

www.hhs.nl/bt

bewegings-technologie

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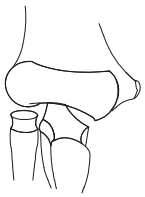
Programma
Introductiecursus 2011



Avond 1:

Algemene kinematica.

Functionele morfologie van spierweefsel.

Avond 2:

Arthro-kinematica.

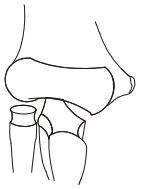
Het morfologisch substraat van de bewegingsbeperking.

Avond 3:

Inleiding praktijk.

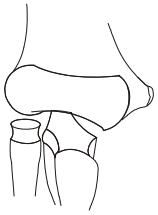
Practicum gewrichtsmodellen.

Drie dimensionale Arthrokinematische Mobilisatie



Doel:

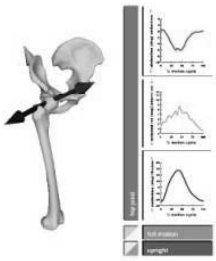
Het opheffen van functie-storingen in gewrichten



BIOMECHANICA

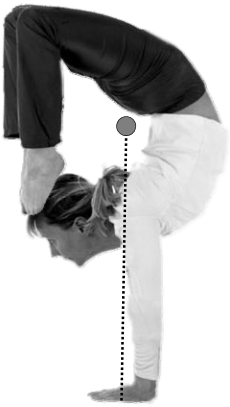
- KINEMATICA
- DYNAMICA
- STATICA

KINEMATICA



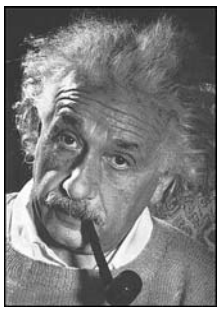
DYNAMICA

STATICA



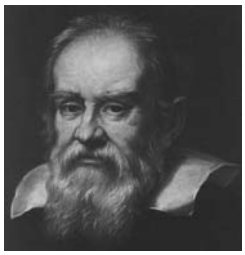
BIOMECHANICA

- KINEMATICA ➡ Arthro-Kinematica
- DYNAMICA
- STATICA



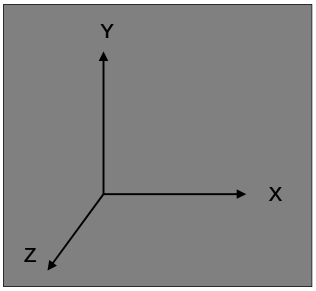
Albert Einstein1879-1955

Bewegen is relatief !

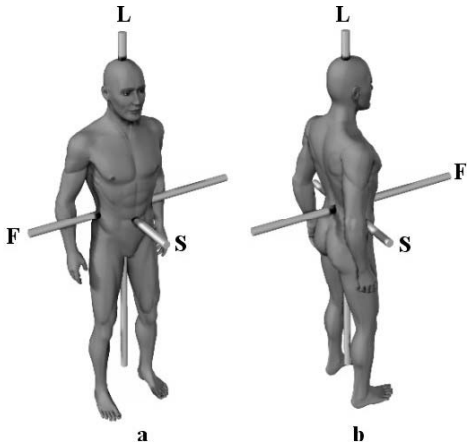


Galileo Galilei 1564-1642

Bewegingsbeschrijving is afhankelijk van het referentiekader

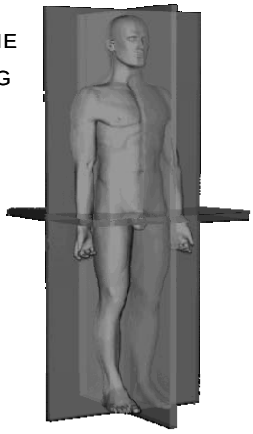


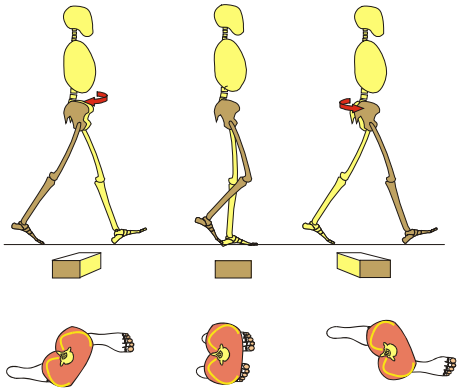
BEWEGINGS-BESCHRIJVING
t.o.v. wereld-coördinaten

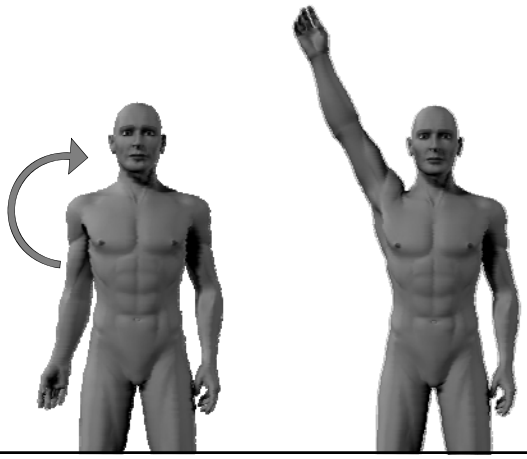


DESCRIPTIEF ANATOMISCHE
BEWEGINGS-BESCHRIJVING

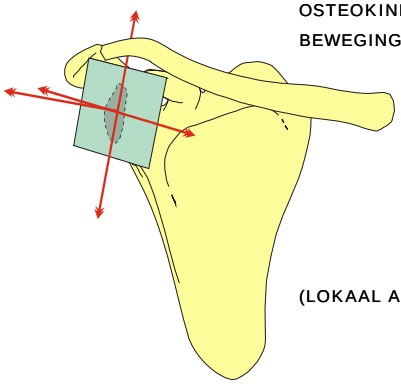
(GLOBAAL ASSENSTELSEL)



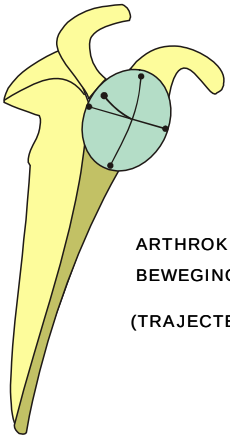




OSTEOKINEMATISCHE
BEWEGINGS-BESCHRIJVING

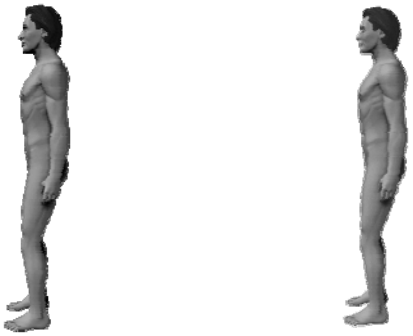


(LOKAAL ASSENSTELSEL)

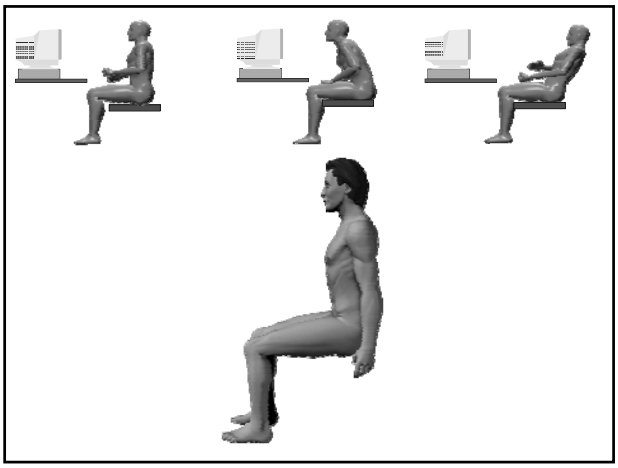


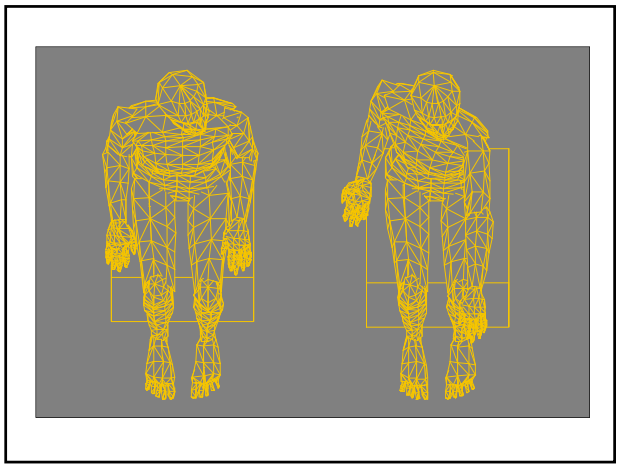
ARTHROKINEMATISCHE
BEWEGINGS-BESCHRIJVING

(TRAJECTEN OP KOP EN KOM)



Onderliggend of bovenliggend bewegen



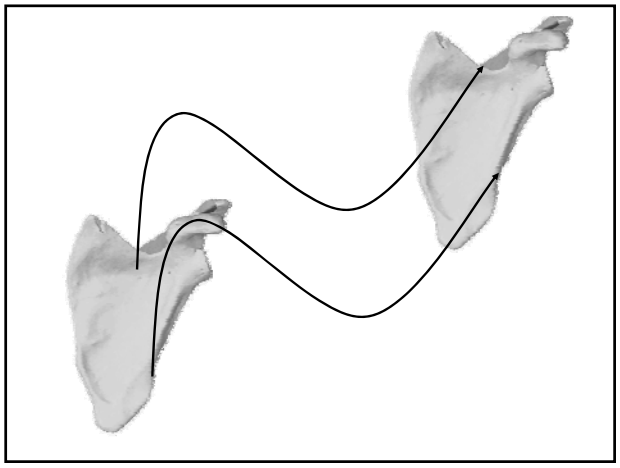


TRANSLATIE

Alle punten van een lichaam doorlopen dezelfde afgelegde weg.

Wel verandering van plaats, maar niet van stand.

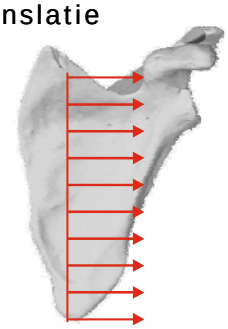
Verplaatsing evenwijdig aan zichzelf.

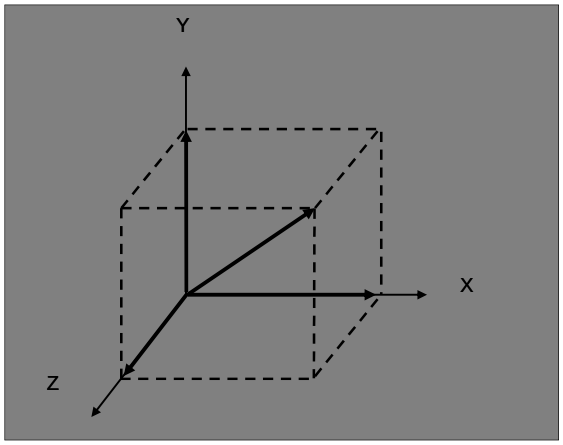


CIRKEL-TRANSLATIE

Snelheidsverdeling

Translatie

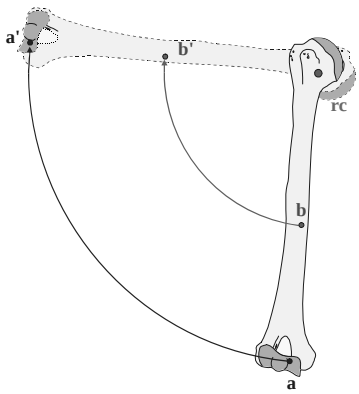


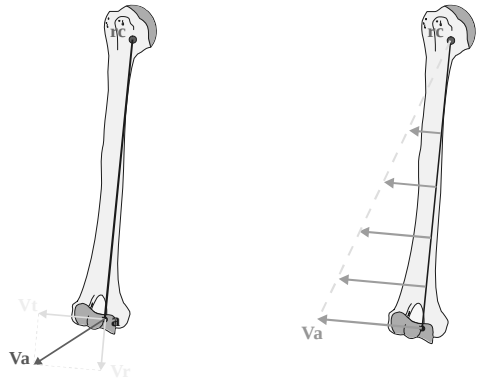


ROTATIE

Een beweging waarbij op elk moment een punt aanwijsbaar is met snelheid 0 (de rotatie-as).

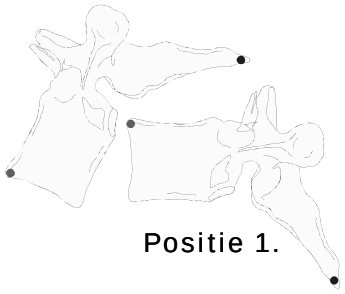
Alle punten beschrijven cirkelbanen met de rotatie-as als middelpunt.





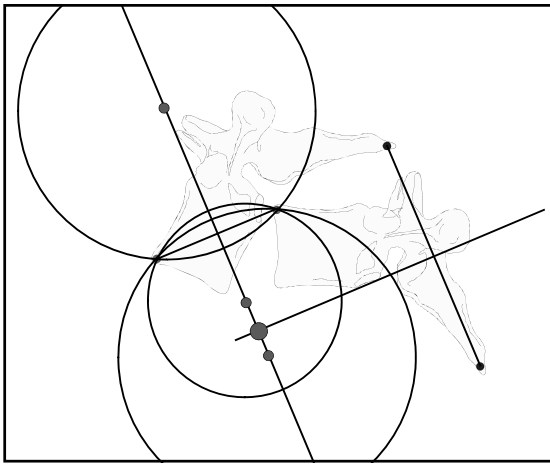
Richting van de snelheid Snelheidsverdeling

Positie 2.



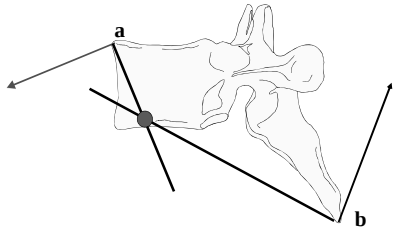
Positie 1.

Gevraagd: Waar ligt het Rotatie Centrum?

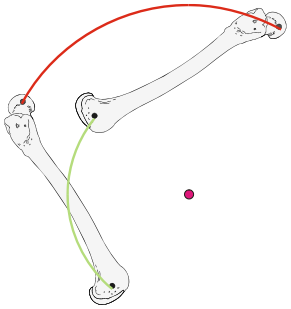


Gegeven: verpl. richting a en b.

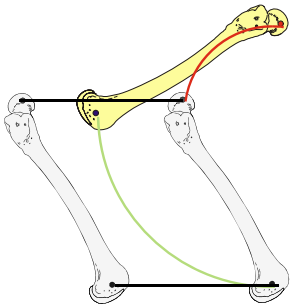
Gevraagd: MRC

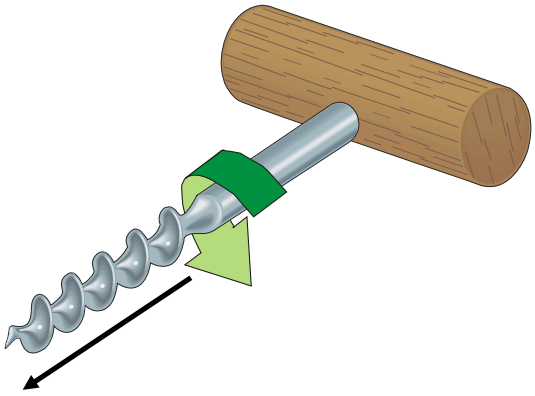


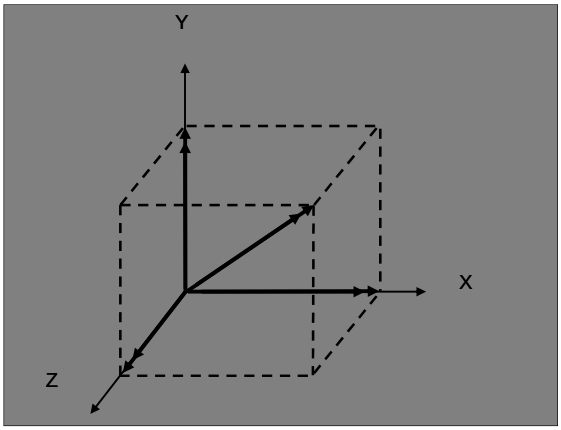
Beschrijving mbv Rotatie

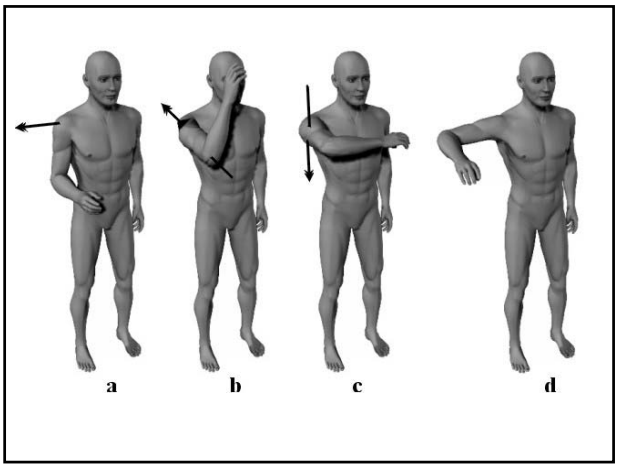


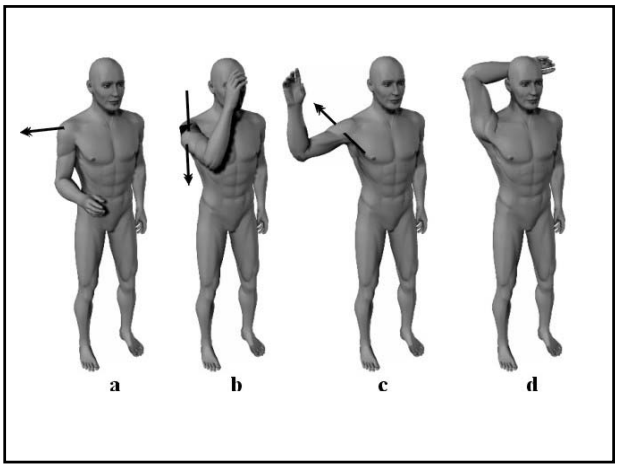
Beschrijving mbv translatie en rotatie.

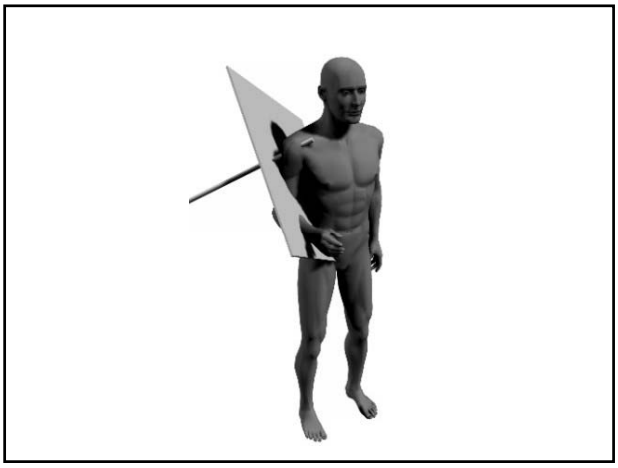


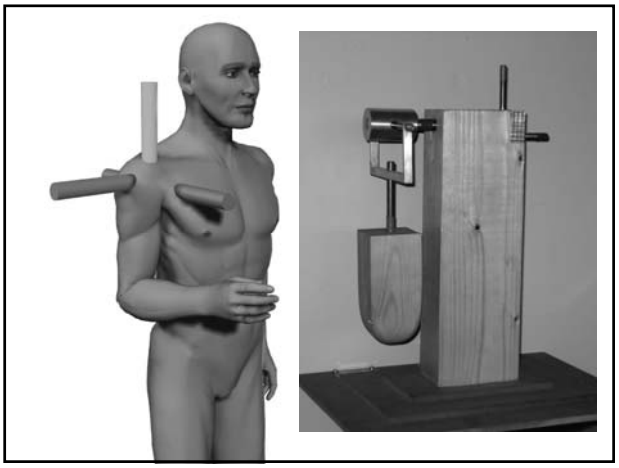


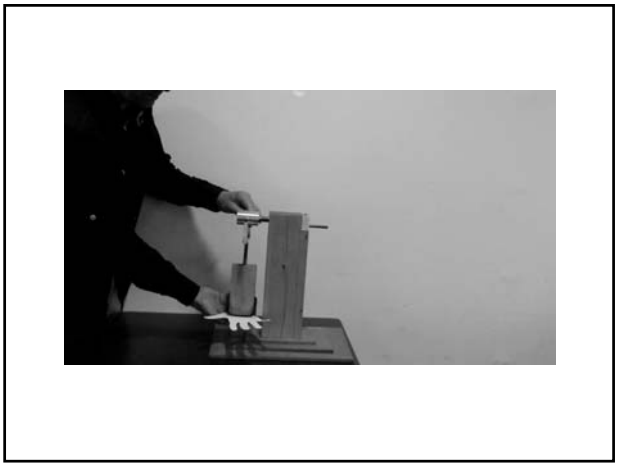


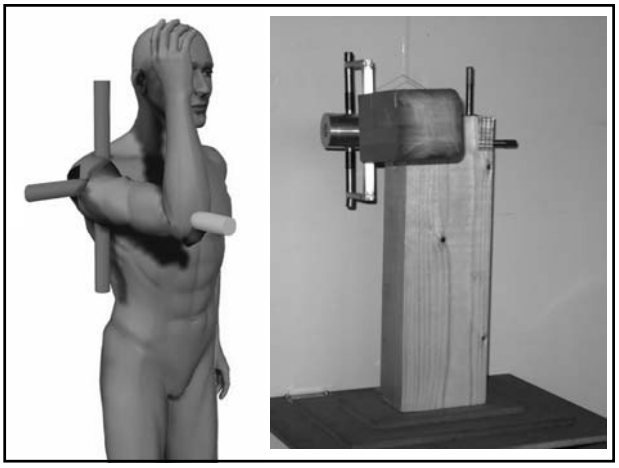

a
b
c
d

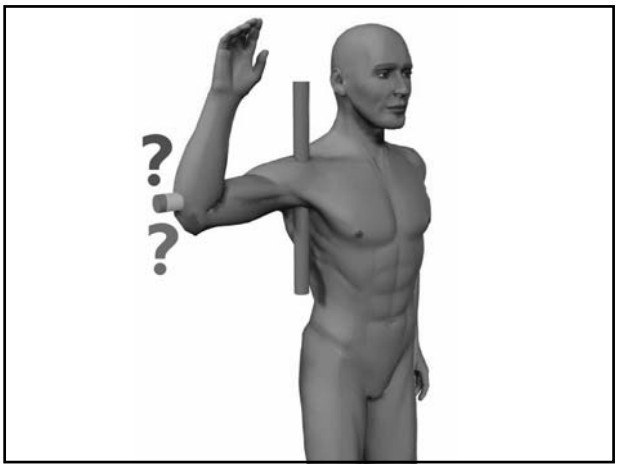

a
b
c
d







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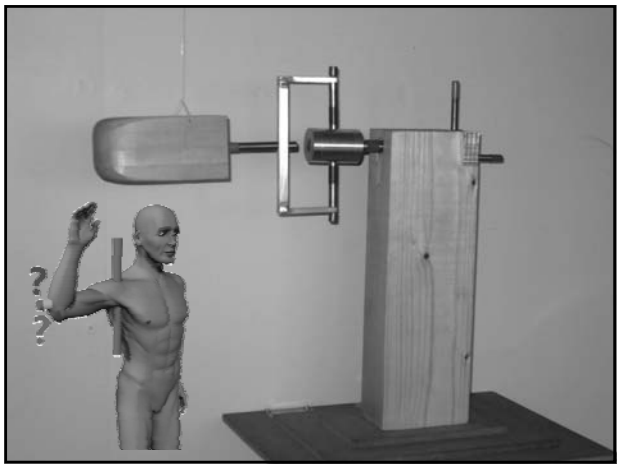
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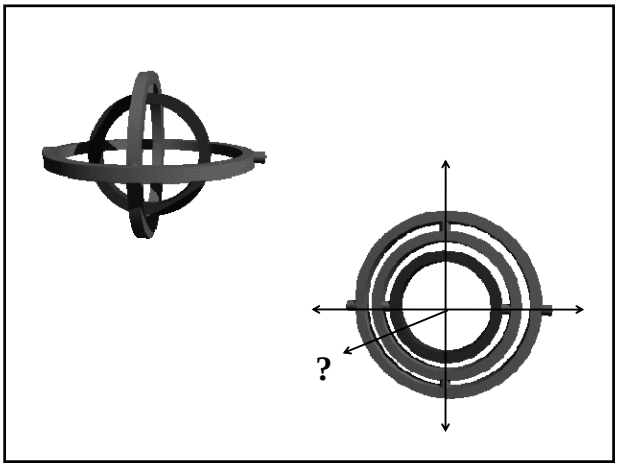
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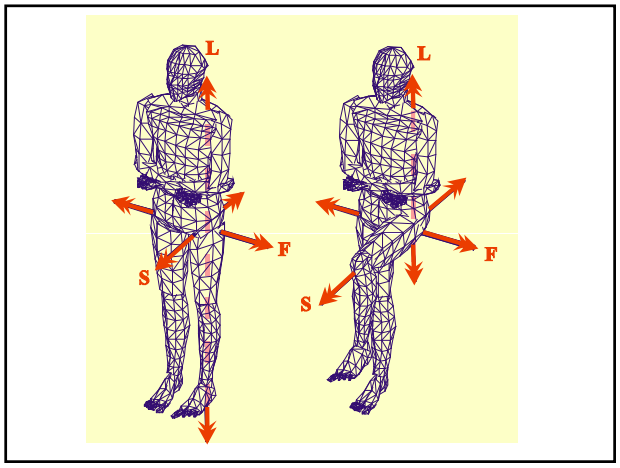
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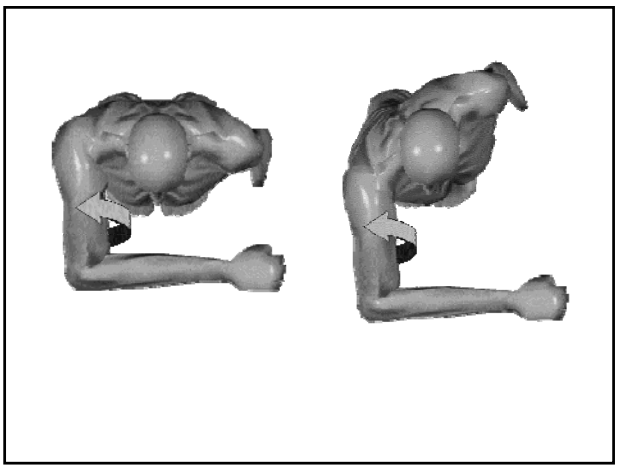
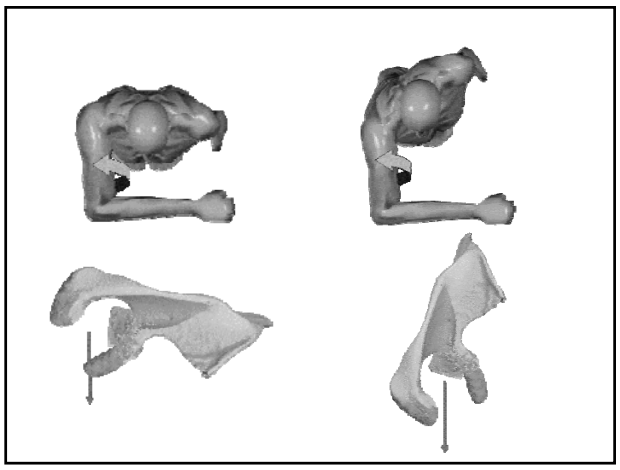
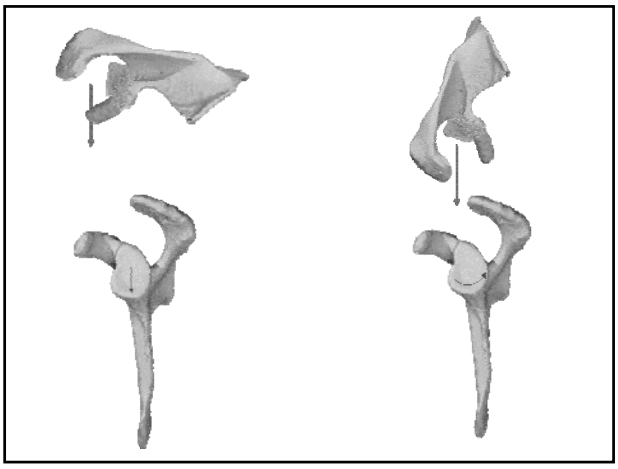
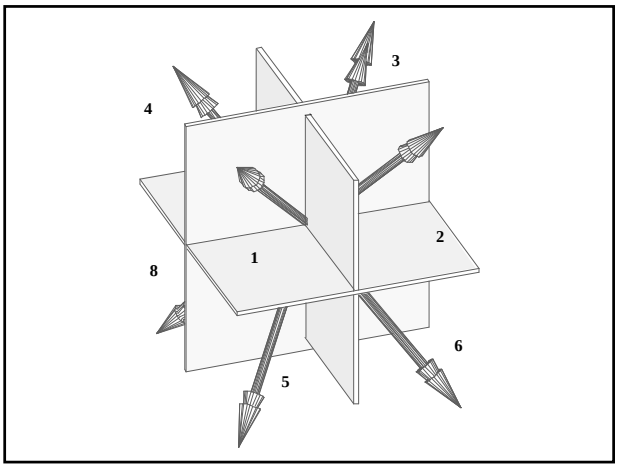
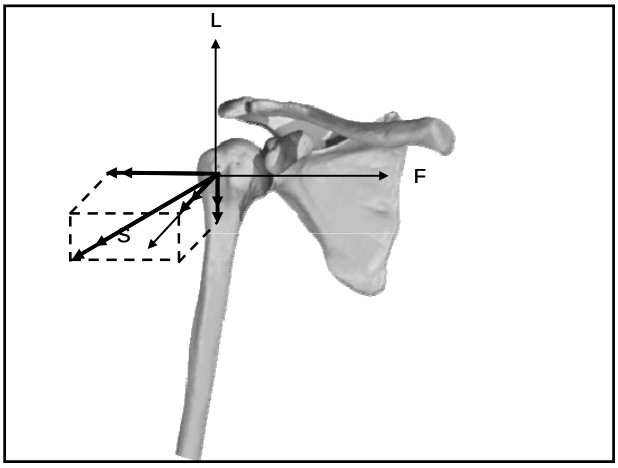




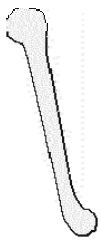






Vrijheidsgraden en Beperkingen

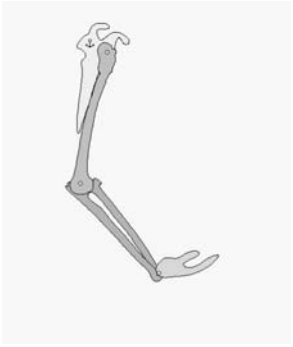
Twee dimensionaal: 3DF
Drie dimensionaal: 6DF



Aantal vrije elementen = 1 (3DF)
Aantal verbindingen = 1
som van de constraints in de verbindingen = 2

Aantal vrije elementen = 2 (samen 6 df)
Aantal verbindingen = 2
som van de constraints in de verbindingen = 4

Aantal vrije elementen = 3 (samen 9 df)
Aantal verbindingen = 3
som van de constraints in de verbindingen = 6



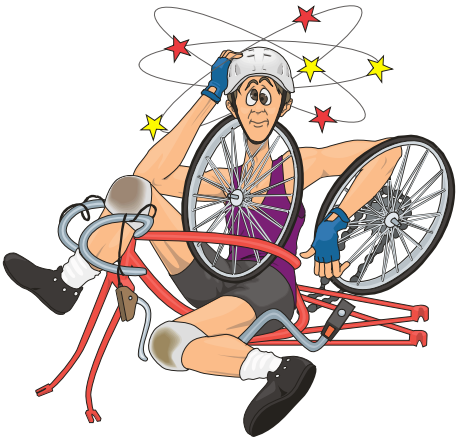
Bij een drie-dimensionale analyse:

$$DF = 6.(N-1) - \Sigma C$$

Bij een twee-dimensionale analyse:

$$DF = 3.(N-1) - \Sigma C$$

Vrijheidsgraden analyse van het fietsende been (twee dimensionaal)



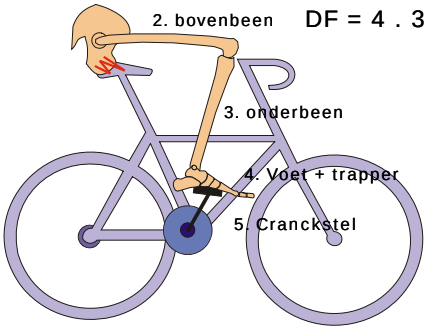
Aantal elementen

1. Frame + Bekken

N = (5 - 1) = 4

2. bovenbeen

DF = 4 . 3 = 12

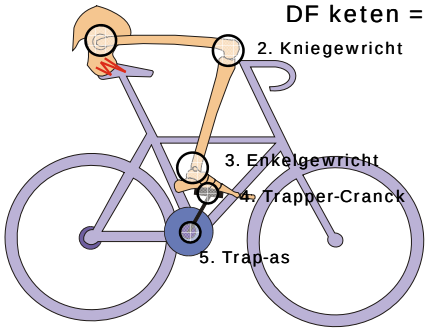


verbindingen

1. Heupgewricht

5 . 2 constraint = 10

DF keten = 12 –10 = 2

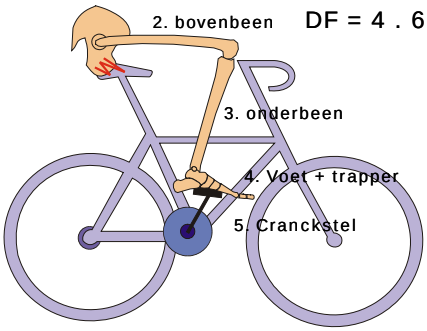


De fiets 3D

Aantal elementen

1. Frame + Bekken

N = (5 - 1) = 4

2. bovenbeen

DF = 4 . 6 = 24