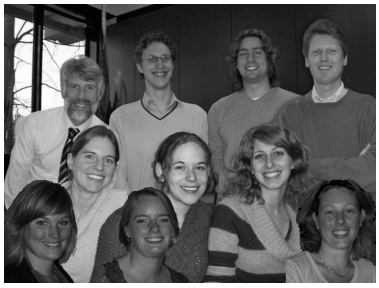
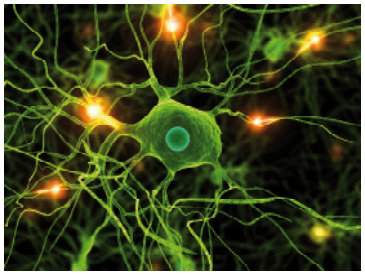


Motoriek, cognitie en gedrag bij ouderen met een dementie

Erik Scherder

Afdeling Klinische Neuropsychologie,
VU Amsterdam



Educ Psychol Rev (2008) 20:111–131
DOI 10.1007/s10648-007-9057-0

REVIEW ARTICLE

Exercise and Children's Intelligence, Cognition, and Academic Achievement

Phillip D. Tomporowski · Catherine L. Davis · Patricia H. Miller · Jack A. Naglieri

Neuroscience Letters 441 (2008) 219–223

Contents lists available at ScienceDirect

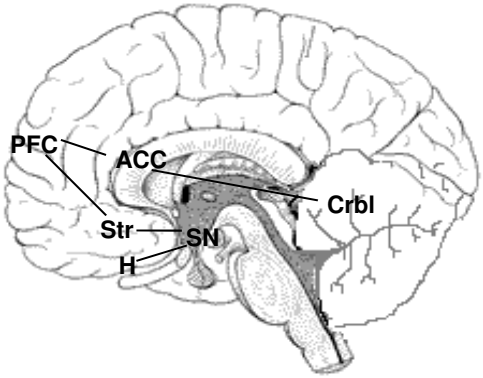
Neuroscience Letters

journal homepage: www.elsevier.com/locate/neulet

Acute coordinative exercise improves attentional performance in adolescents

Henning Budde [a,*], Claudia Voelcker-Rehage [b], Sascha Pietraßyk-Kendziorra [a], Pedro Ribeiro [c], Günter Tidow [a]

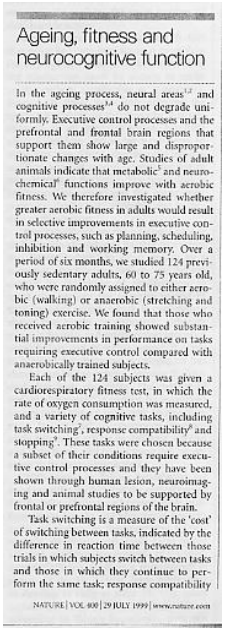
[a] Department of Movement and Training Science, Institute of Sport Science, Humboldt University Berlin, Konrad-Wolf-Str. 45, 13053 Berlin, Germany
[b] Jacobs Center on Lifelong Learning and Institutional Development, Jacobs University Bremen, Germany
[c] Bioscience Department, School of Physical Education, Federal University of Rio de Janeiro (EEFD/UFRJ), Brazil



Effects of aerobic exercise on overweight children's cognitive functioning: a randomized controlled trial

Davis CL, **Tomporowski PD**, **Boyle CA**, **Waller JL**, **Miller PH**, **Naglieri JA**, **Gregoski M**.
Res Q Exerc Sport. 2007 Dec;78(5):510-9.

Art Kramer



Ageing, fitness and neurocognitive function

In the ageing process, neural areas[1,2] and cognitive processes[3,4] do not degrade uniformly. Executive control processes and the prefrontal and frontal brain regions that support them show large and disproportionate changes with age. Studies of adult animals indicate that metabolic[5] and neurochemical[6] functions improve with aerobic fitness. We therefore investigated whether greater aerobic fitness in adults would result in selective improvements in executive control processes, such as planning, scheduling, inhibition and working memory. Over a period of six months, we studied 124 previously sedentary adults, 60 to 75 years old, who were randomly assigned to either aerobic (walking) or anaerobic (stretching and toning) exercise. We found that those who received aerobic training showed substantial improvements in performance on tasks requiring executive control compared with anaerobically trained subjects.

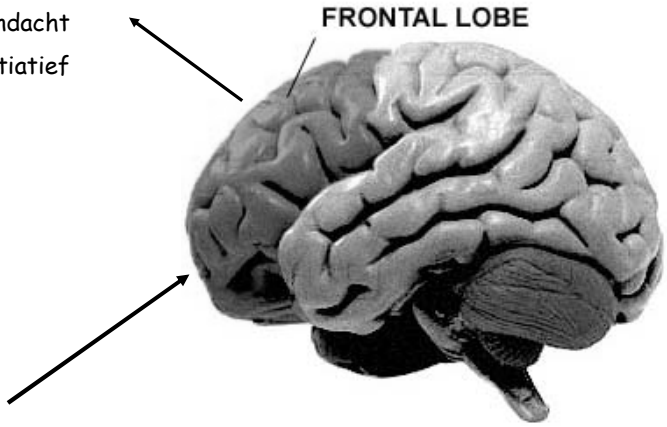
Each of the 124 subjects was given a cardiorespiratory fitness test, in which the rate of oxygen consumption was measured, and a variety of cognitive tasks, including task switching[7], response compatibility[8] and stopping[9]. These tasks were chosen because a subset of their conditions require executive control processes and they have been shown through human lesion, neuroimaging and animal studies to be supported by frontal or prefrontal regions of the brain.

Task switching is a measure of the 'cost' of switching between tasks, indicated by the difference in reaction time between those trials in which subjects switch between tasks and those in which they continue to perform the same task; response compatibility

NATURE | VOL 400 | 29 JULY 1999 | www.nature.com

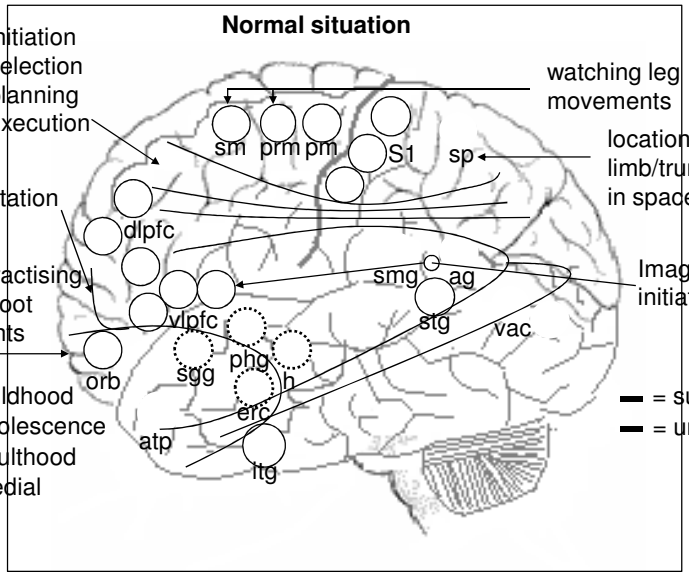
Nature, 1999

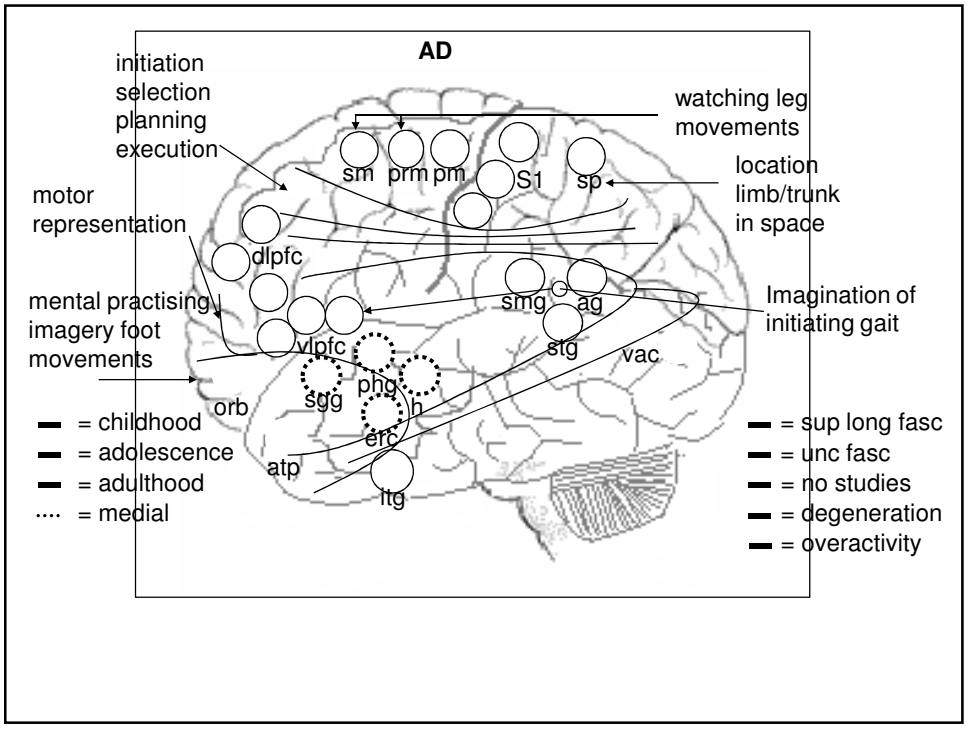
Inhibitie
Planning
Flexibiliteit
Aandacht
Initiatief



Kwetsbaar voor normale veroudering

Betrokken bij vele subtypen dementie

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initiation
selection
planning
execution
watching leg
movements
location
limb/trunk
in space
motor
representation
sm
prm
pm
S1
sp
dlpfc
mental practising
imagery foot
movements
smg
ag
Imagination of
initiating gait
vlpfc
stg
vac
phg
sgg
orb
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atp
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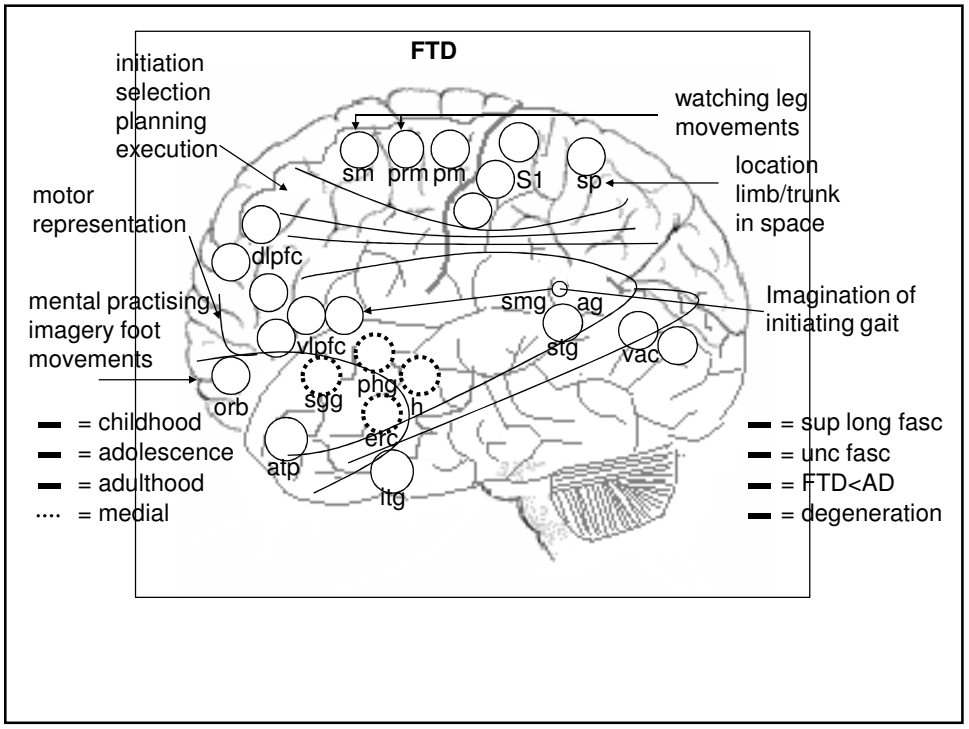
= adolescence
= adulthood
= medial
= sup long fasc
= unc fasc
= no studies
= degeneration
= overactivity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planning
execution
watching leg
movements
location
limb/trunk
in space
motor
representation
sm
prm
pm
S1
sp
dlpfc
mental practising
imagery foot
movements
smg
ag
Imagination of
initiating gait
vlpfc
stg
vac
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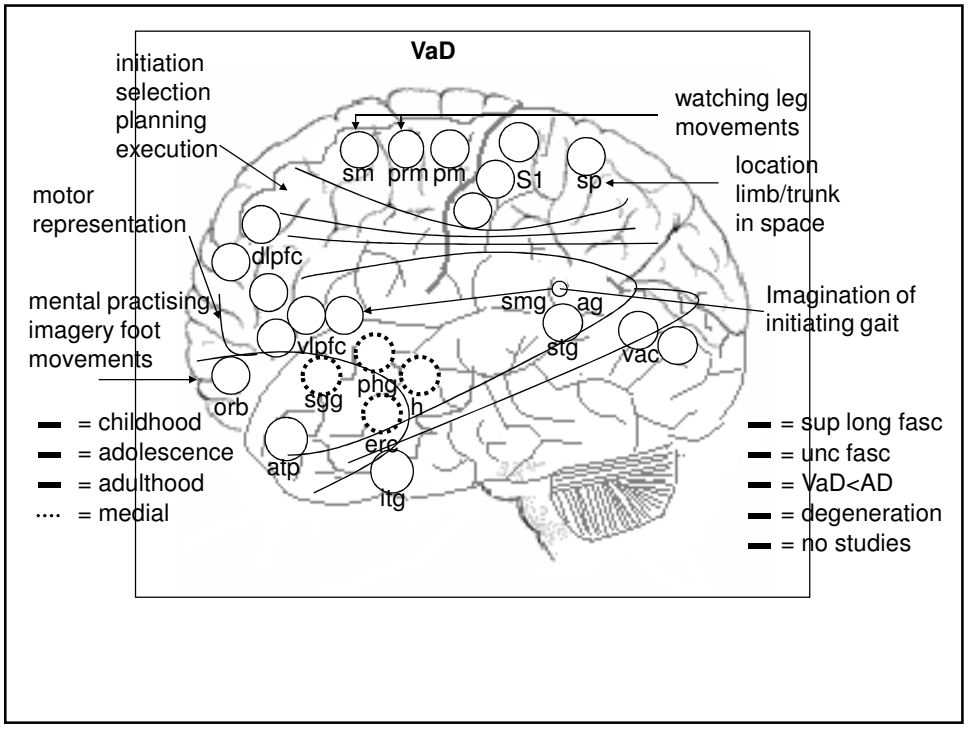
= adulthood
= medial
= sup long fasc
= unc fasc
= FTD<AD
= degeneration


VaD
initiation
selection
planning
execution
watching leg
movements
location
limb/trunk
in space
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representation
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prm
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dlpfc
mental practising
imagery foot
movements
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Imagination of
initiating gait
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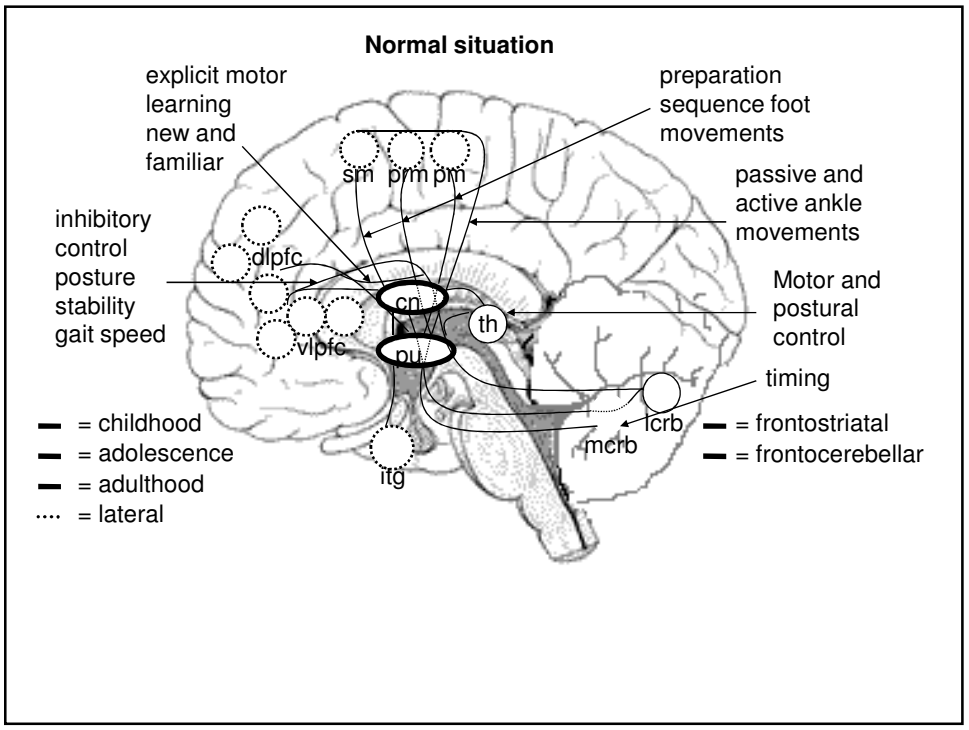
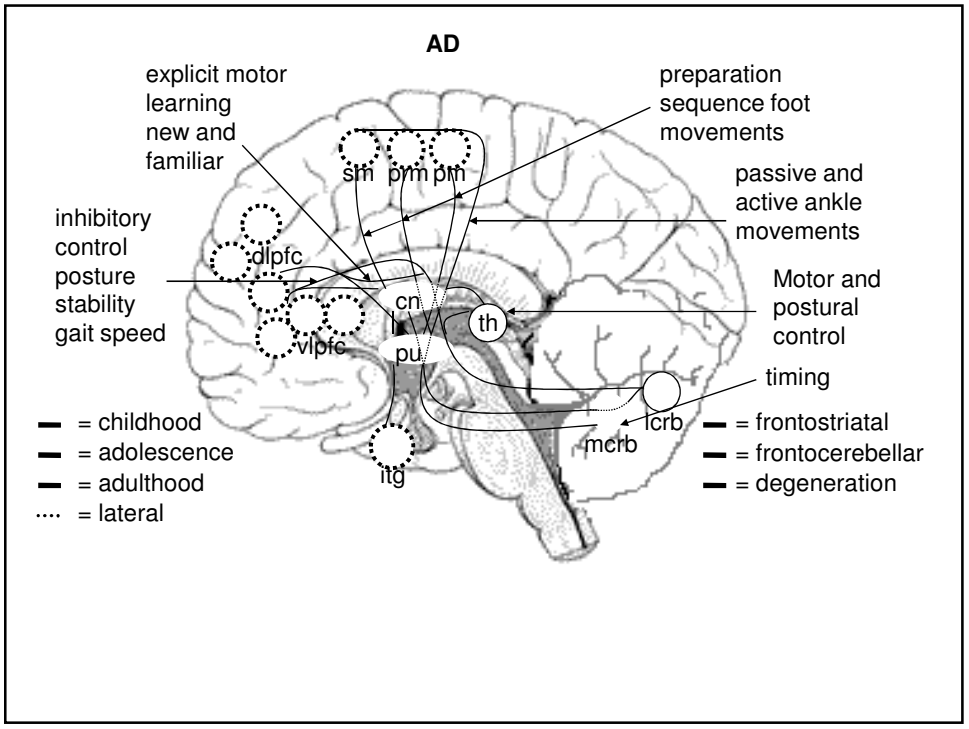
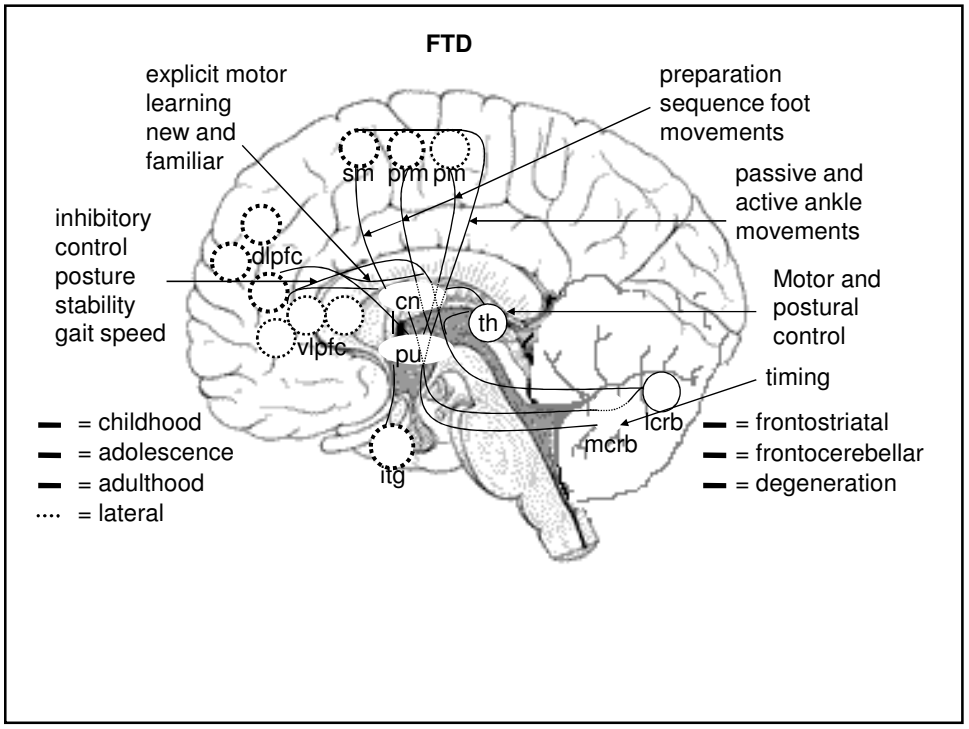
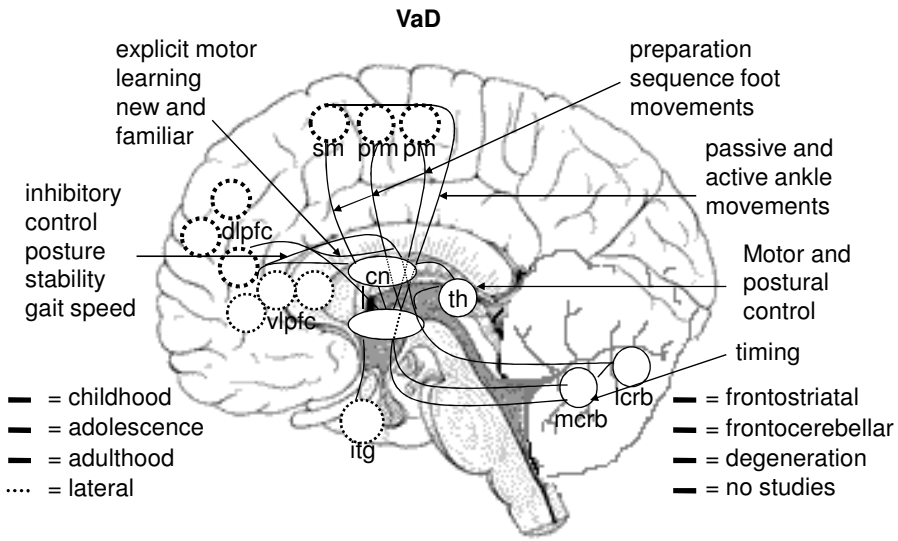
= medial
= sup long fasc
= unc fasc
= VaD<AD
= degeneration
= no studies


Normal situation
explicit motor
learning
new and
familiar
preparation
sequence foot
movements
sm
prm
pm
passive and
active ankle
movements
inhibitory
control
posture
stability
gait speed
dlpfc
cn
th
Motor and
postural
control
vlpfc
pu
timing
lcrb
mcrb
itg
= childhood
= adolescence
= adulthood
= lateral
= frontostriatal
= frontocerebellar

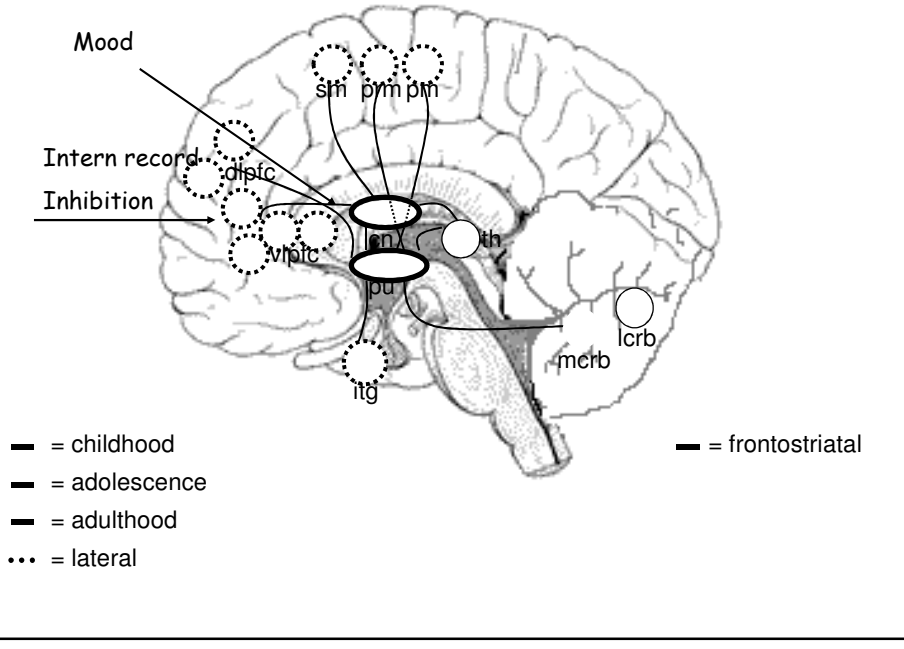

AD
explicit motor learning new and familiar
preparation sequence foot movements
sm pm pm
passive and active ankle movements
inhibitory control posture stability gait speed
dlpfc
cn
th
Motor and postural control
vlpfc
pu
timing
lcrb
mcrb
itg
= childhood
= adolescence
= adulthood
= lateral
= frontostriatal
= frontocerebellar
= degeneration


FTD
explicit motor learning new and familiar
preparation sequence foot movements
sm pm pm
passive and active ankle movements
inhibitory control posture stability gait speed
dlpfc
cn
th
Motor and postural control
vlpfc
pu
timing
lcrb
mcrb
itg
= childhood
= adolescence
= adulthood
= lateral
= frontostriatal
= frontocerebellar
= degeneration

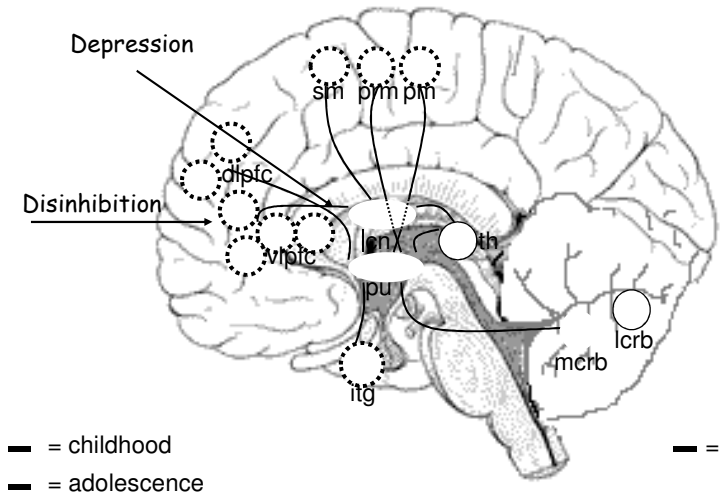
VaD



Normal situation

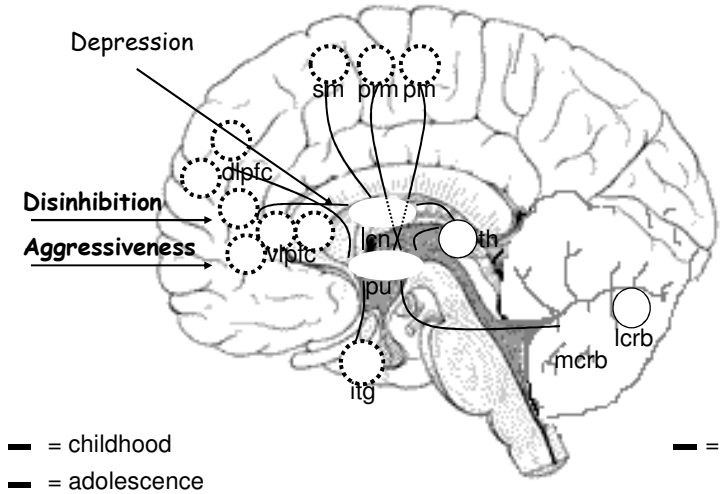


AD

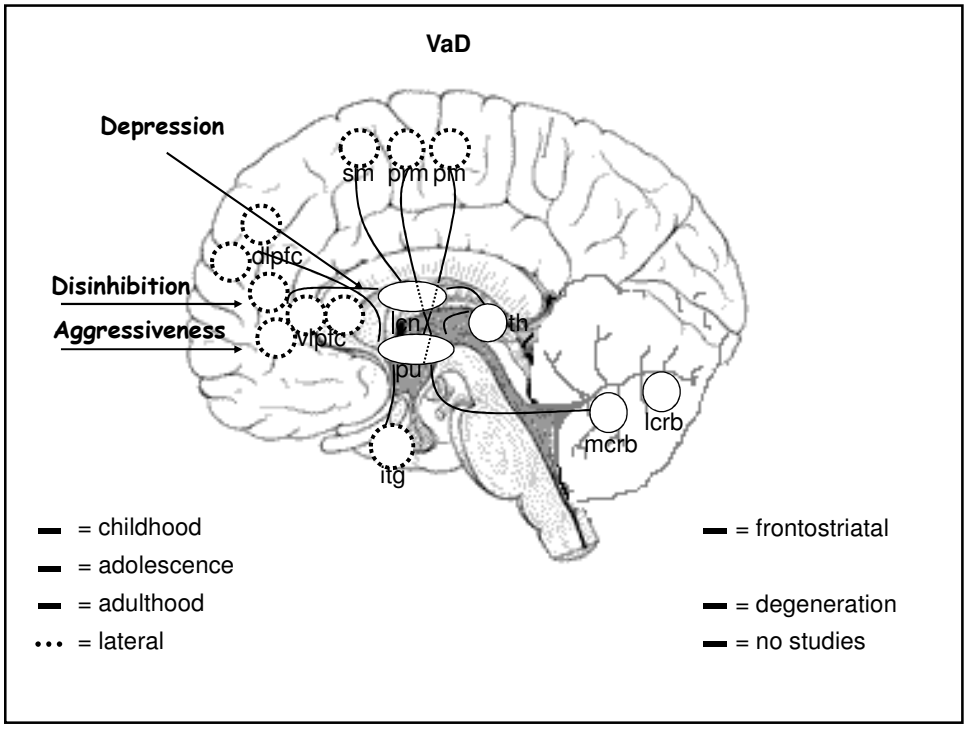


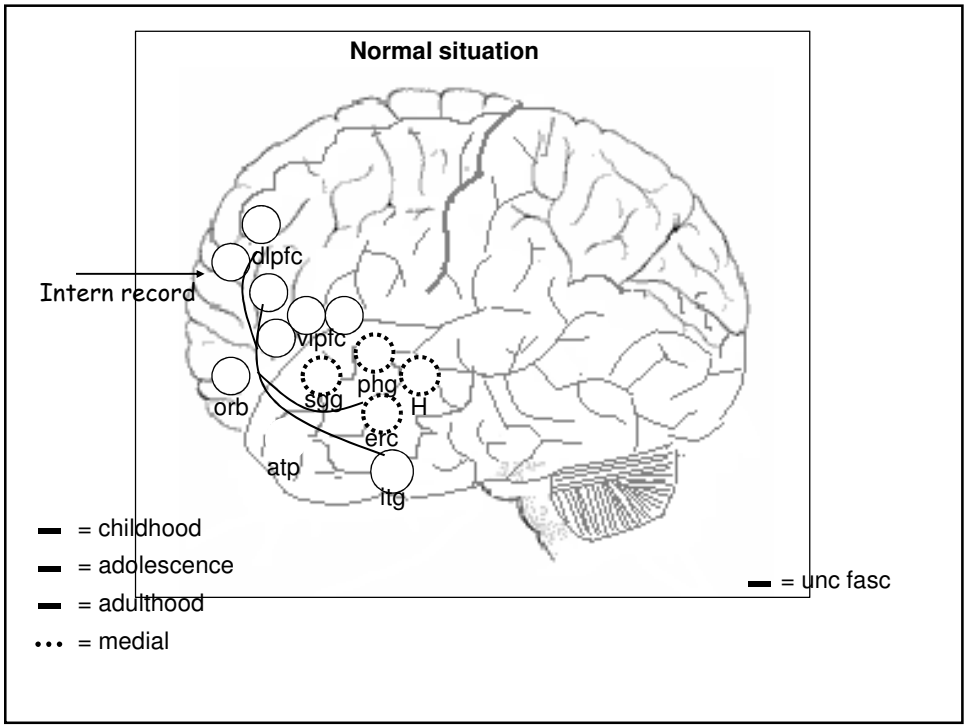
- = childhood
- = adolescence
- = adulthood
- = lateral
- = frontostriatal
- = degeneration

FTD



- = childhood
- = adolescence
- = adulthood
- = lateral
- = frontostriatal
- = degeneration


VaD
Depression
Disinhibition
Aggressiveness
dlpfc
vlpfc
sm
pvm
pm
lgn
th
pu
lcrb
mcrb
itg
= childhood
= adolescence
= adulthood
= lateral
= frontostriatal
= degeneration
= no studies


Normal situation
Intern record
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vlpfc
orb
sgg
phg
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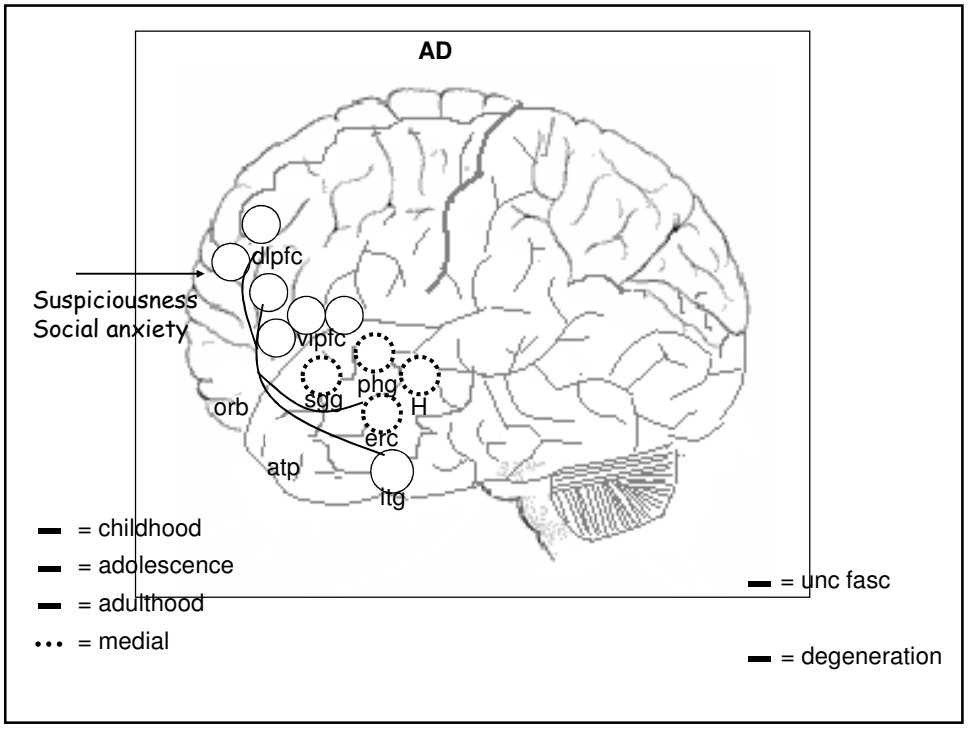
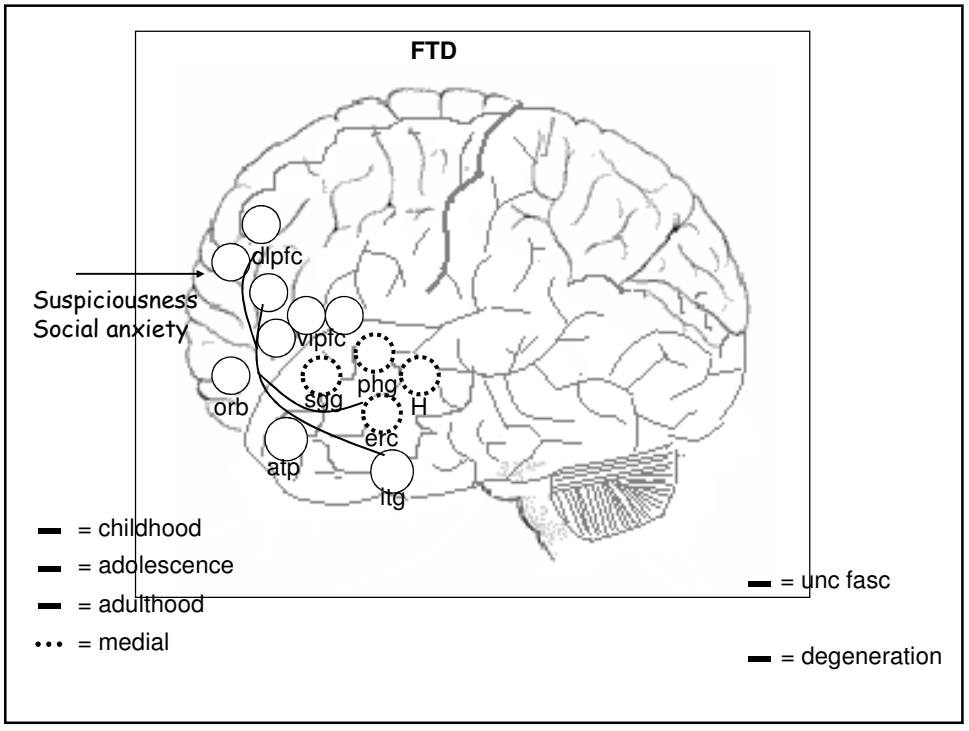
erc
atp
itg
= childhood
= adolescence
= adulthood
= medial
= unc fasc


AD
dlpfc
Suspiciousness
Social anxiety
vlpfc
phg
sgg
H
orb
erc
atp
ltg
= childhood
= adolescence
= adulthood
= medial
= unc fasc
= degeneration


FTD
dlpfc
Suspiciousness
Social anxiety
vlpfc
phg
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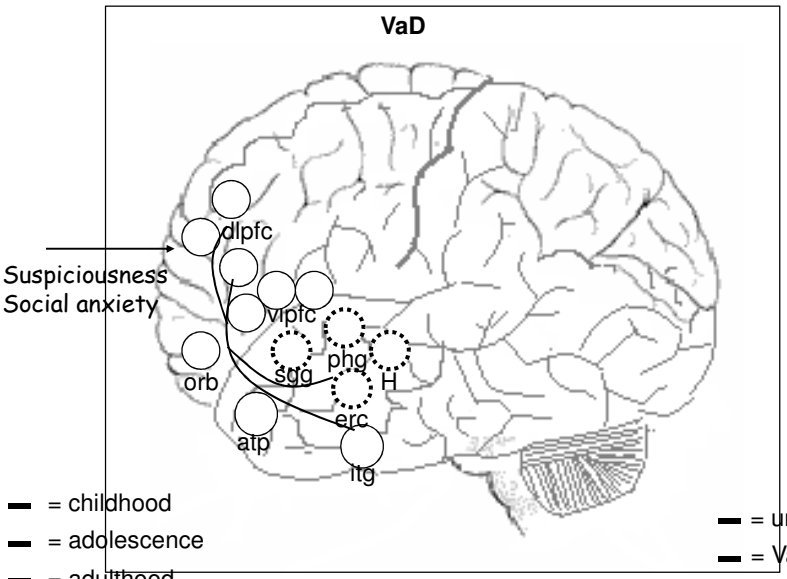
= adolescence
= adulthood
= medial
= unc fasc
= degeneration


VaD
dlpfc
Suspiciousness
Social anxiety
vlpfc
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orb
erc
atp
itg
= childhood
= adolescence
= adulthood
= medial
= unc fasc
= VaD<AD
= degeneration
= no studies

Z Gerontol Geriat 38:19–25 (2005)
DOI 10.1007/s00391-005-0286-x

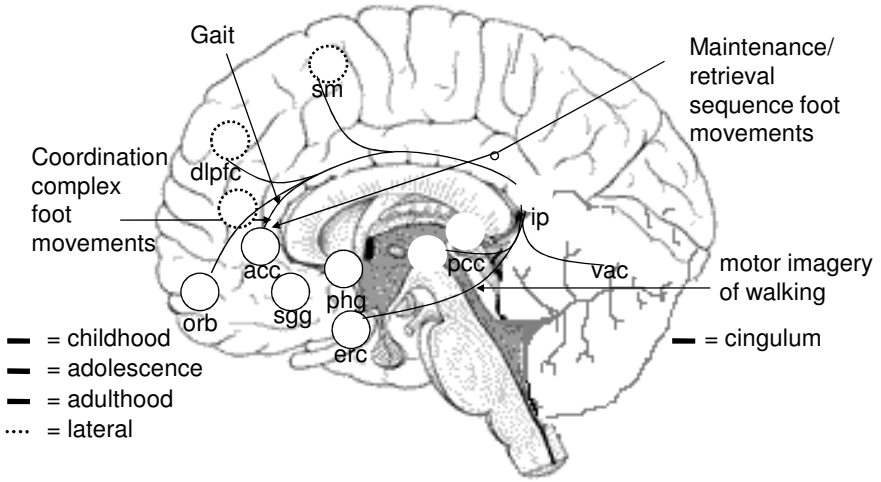
CONTRIBUTION TO THE MAIN TOPIC

J. P. H. Hamers
A. R. Huizing

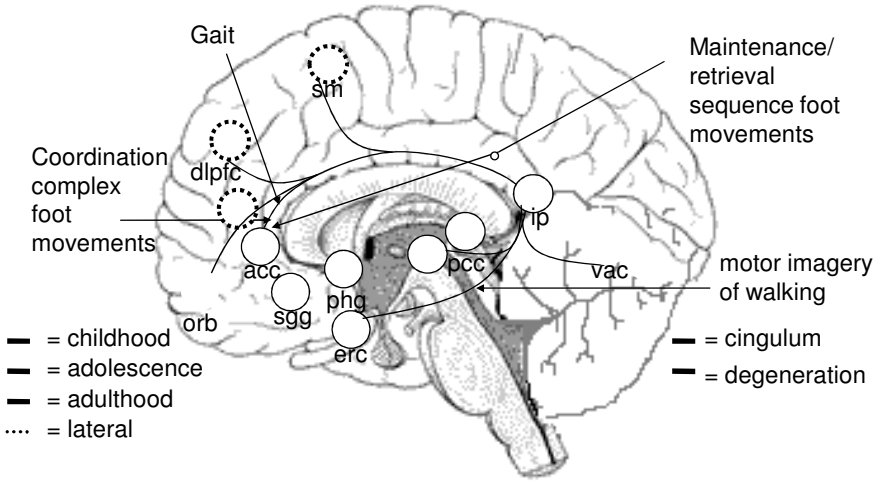
Why do we use physical restraints in the elderly?

Dank voor uw aandacht!

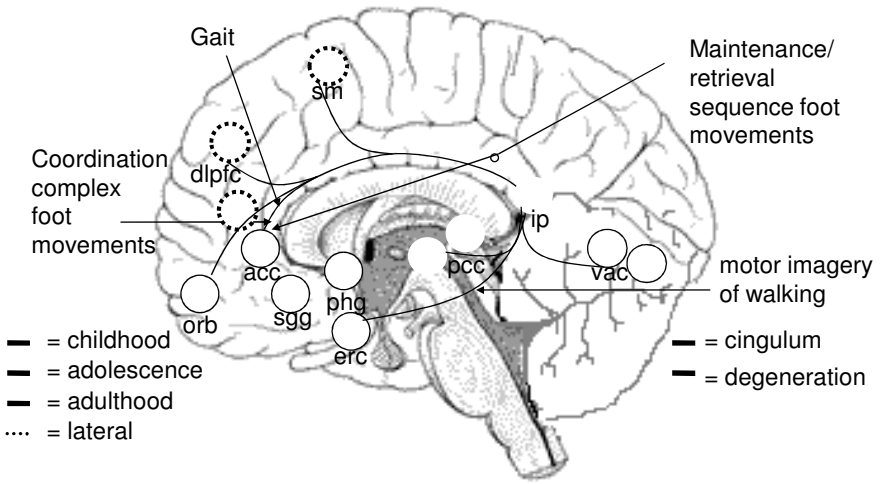
Normal situation



AD



FTD


Gait
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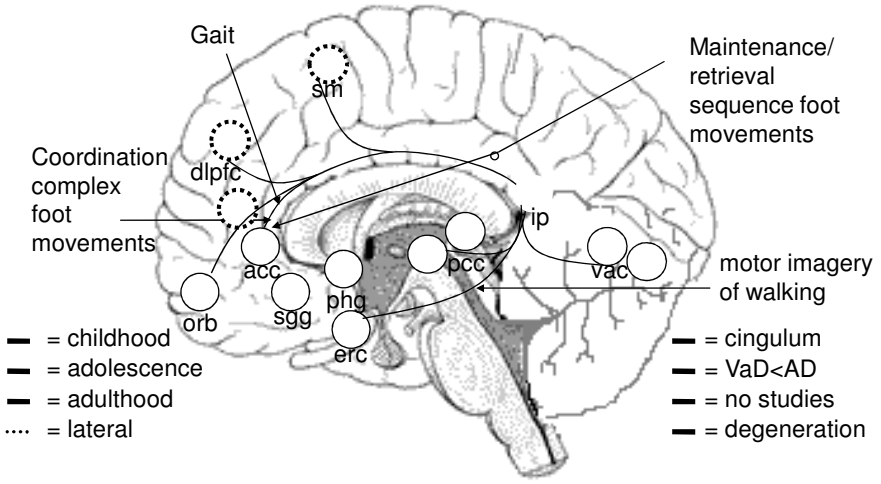
Maintenance/
retrieval
sequence foot
movements
Coordination
complex
foot
movements
dlpfc
ip
acc
pcc
vac
motor imagery
of walking
phg
sgg
orb
erc
= childhood
= adolescence
= adulthood
= lateral
= cingulum
= degeneration

VaD


Gait
sm
Maintenance/
retrieval
sequence foot
movements
Coordination
complex
foot
movements
dlpfc
ip
acc
pcc
vac
motor imagery
of walking
phg
sgg
orb
erc
= childhood
= adolescence
= adulthood
= lateral
= cingulum
= VaD<AD
= no studies
= degeneration