

Rhizarthrosis in banknote processing

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Dr. André DE LANDTSHEER
Chief Occupational Health Physician



The National Bank of Belgium : creating and emitting banknotes





I declare no conflict of interest



RHIZARTROSE ALS BEROEPSZIEKTE:

Vergelijkende prevalentiestudie bij tellers/sorteerders van de Nationale Bank van België (NBB)



Dr. Guy Verrijdt



Promotor: Prof. Dr. Lode Godderis (KULeuven)

Co-promotor: Dr. André De Landtsheer

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verdedigd aan de Vrije Universiteit van Brussel op 2 juli 2015*



Rhizarthrosis in banknote processing workers: a retrospective cohort study

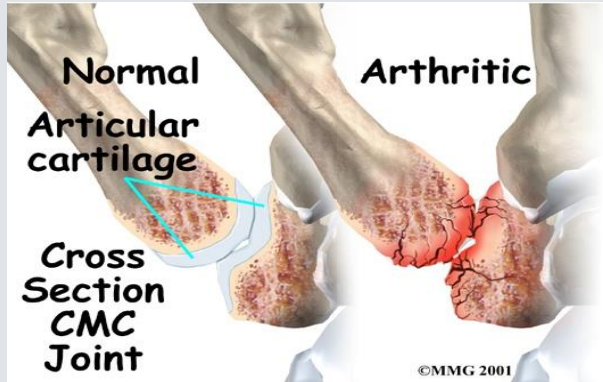
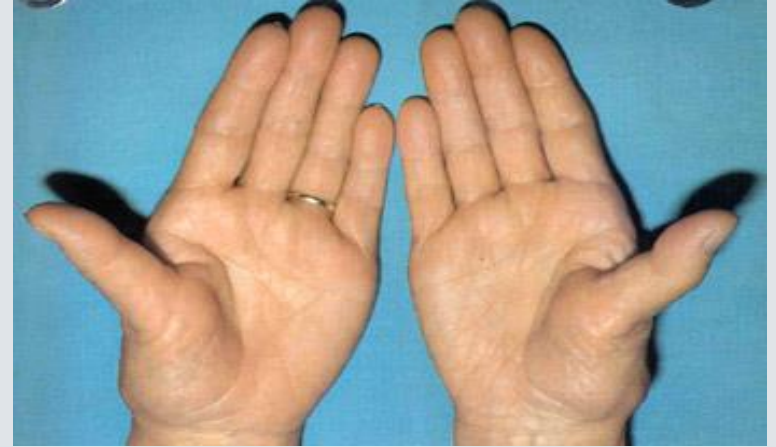
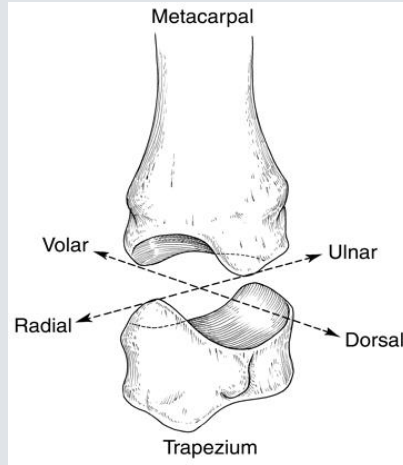
G. Verrijdt¹, A. De Landtsheer², A. Mellen¹ and L. Godderis³

¹Fedris, Avenue de l'Astronomie 1, 1210 Brussels, Belgium; ²National Bank of Belgium, Boulevard de Berlaimont 14, 1000 Brussels, Belgium; ³KU Leuven, Department of Public Health and Primary Care, Environment and Health, Kapucijnenvoer 35 Blok D, Box 7001, 3000 Leuven, Belgium.

- ❑ Participants : 195 (129 F – 66 M)
- ❑ Mean age : 52.9 Y (range 41 – 76 Y, SD 5.4)
- ❑ Cases of rhizarthrosis : 46 (35 F – 11 M)
- ❑ OR for rhizarthrosis after 10 Y FT overall exposure : 1.53 (1,03 – 2,28)



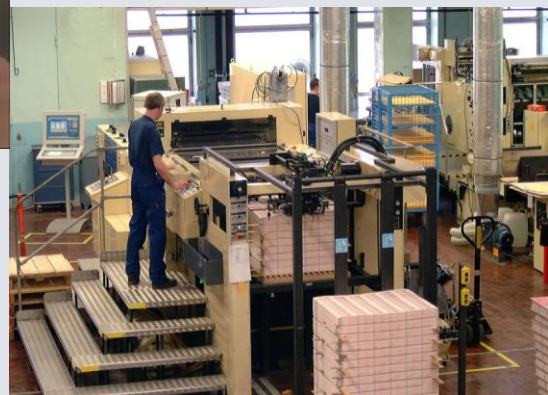
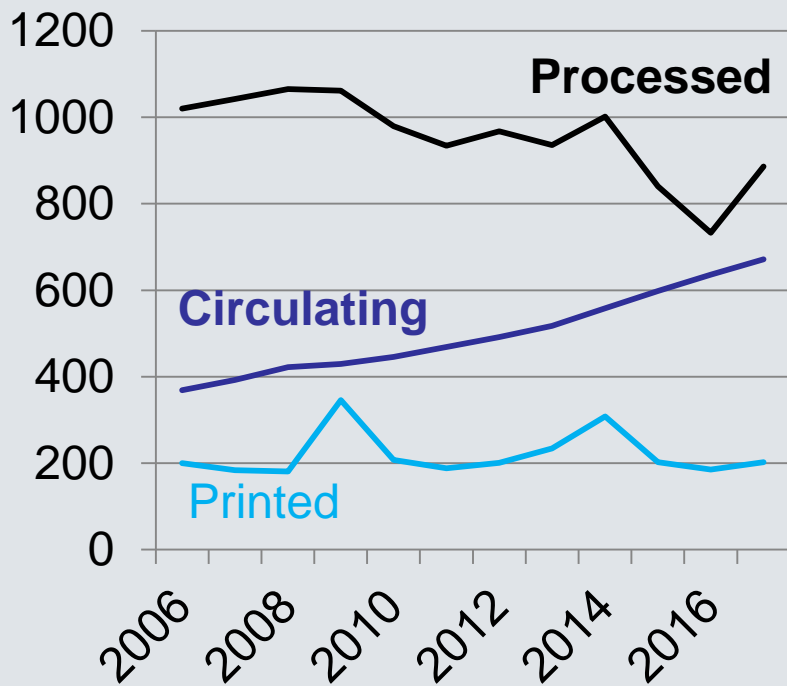
Rhizarthrosis or arthrosis of the CMC1-joint



Banknote processing at the National Bank



Circulating Euro banknotes (millions) in Belgium > printed and processed at the National Bank



Thumb-related symptoms and ability to perform certain activities

DISABILITIES OF THE ARM, SHOULDER AND HAND

THE

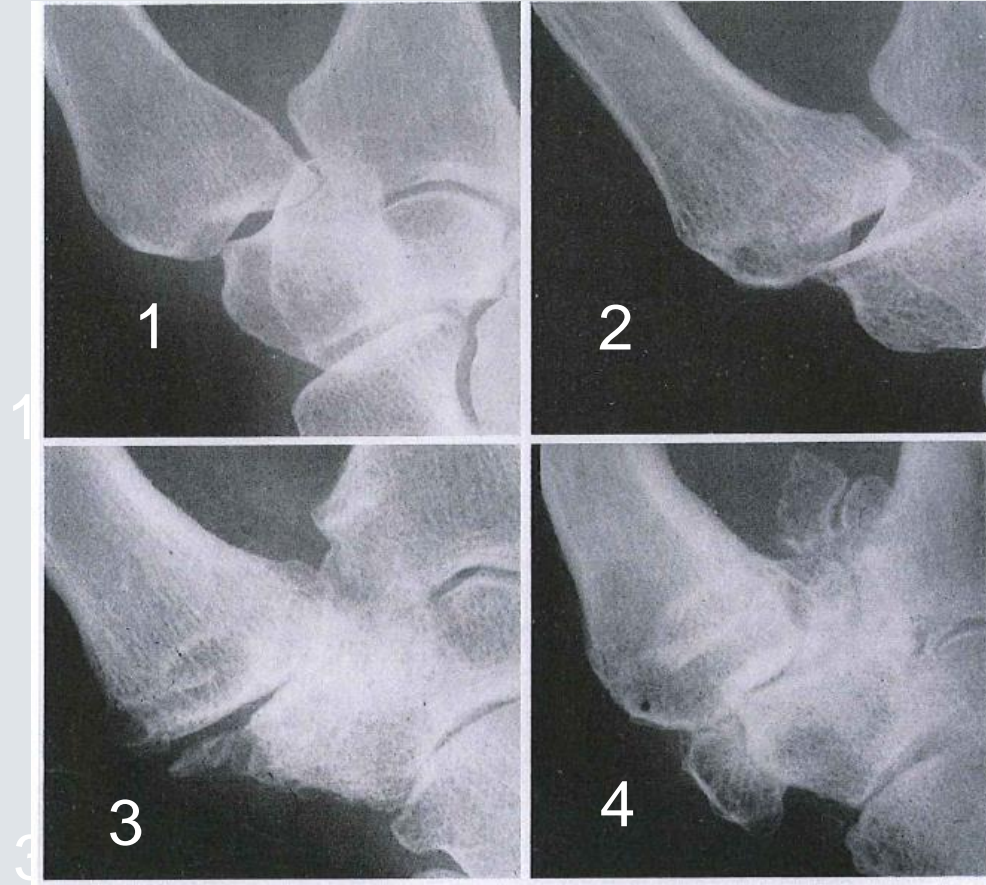
DASH



Cyriax-test for the CMC1-joint (anterior capsule)



Kellgren-Lawrence score for rhizarthrosis



Sound advice for every OHP !

- ✓ Screen for rhizarthrosis in early stage
- ✓ Screen in jobs involving repetitive and forceful gripping and pinching
- ✓ Ask for problems opening jars
- ✓ Do the Cyriax-test
- ✓ Look for other RSI in case of rhizarthrosis
- ✓ Film every repetitive job
- ✓ Stay alert for atypical symptoms...



... so you won't miss the bear !



Questions ?

Ask me anything... but not for money !



OCRA-Index and OCRA-checklist score

OCRA-score	OCRA-index	RISK
$\leq 7,5$	$\leq 2,2$	No risk
7,6 – 11	2,3 – 3,5	Limited risk
11,1 – 14	3,6 – 4,5	Low risk (X2)
14,1 – 22,5	4,6 - 9	Medium risk (X3)
$> 22,5$	> 9	High risk (X4)



OCRA-scores for six types of banknote processing

Activity	Left upper limb	Right upper limb
Controlling banknote sheets ('Fan' technique	8,5	11,5
Manual counting	19	19
Boxing new banknotes	5	11
Opening Cash bags	16	16
Operator on BPS3000	9	17
Operator on BPS1000	13,5	13,5



Manipulations perceived as strainful for the thumb by workers vs. the OCRA score.

Manipulation Thumb+	OCRA-score Left <u>upper limb</u>	OCRA-score Right <u>upper limb</u>
Controlling banknote sheets (‘fan’technique)	8,5	11,5
Manual counting/supervisor	19	19
Operator BPS3000	9	17
Unpacking cash bags	16	16
Operator BPS1000	13,5	13,5
Stocking cash bundles	14	14



Manual counting and sorting banknotes



... the seventies



Attack of the machines... since the eighties



Checking banknote sheets : 'fan' technique (1994)



Entering the Euro-century with the Banknote Processing System (BPS1000)

