

Rhizarthrosis in banknote processing

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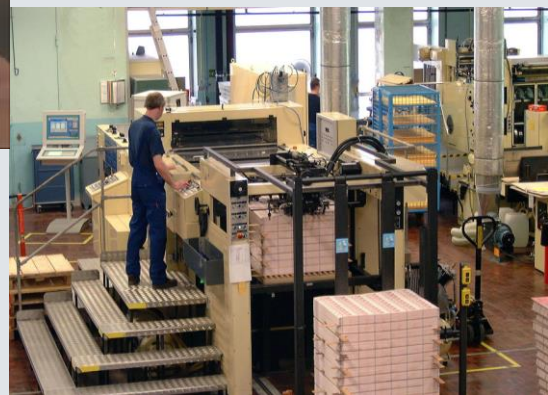
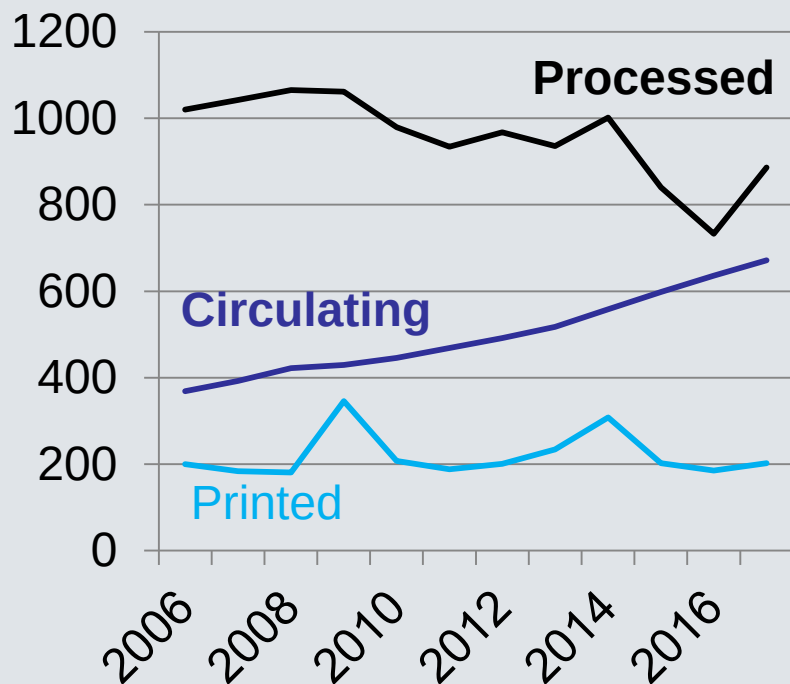


The National Bank of Belgium : creating ,emitting and checking banknotes



Circulating Euro banknotes (millions) in Belgium

> printed and processed at the National Bank



Manual counting and sorting banknotes



... the seventies



Attack of the machines... since the eighties

1979



1990



Checking banknote sheets : 'fan' technique (1994)



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



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



Banknote processing at the National Bank



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

*Masterthesis tot het bekomen van de graad van Master-Na-Master in de Arbeidsgeneeskunde
verdedigd aan de Vrije Universiteit van Brussel op 2 juli 2015*



Rhizarthrosis in banknote processing workers: a retrospective cohort study

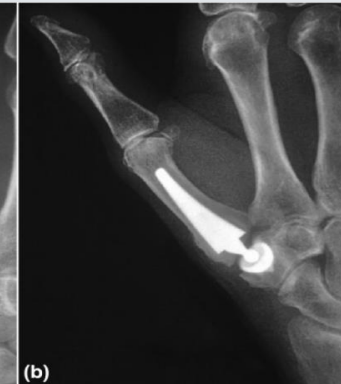
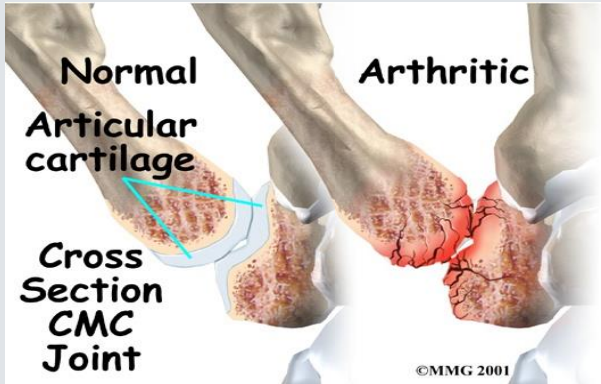
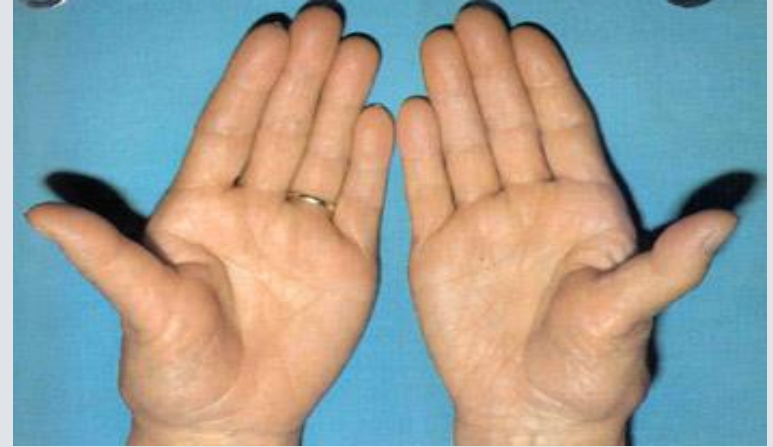
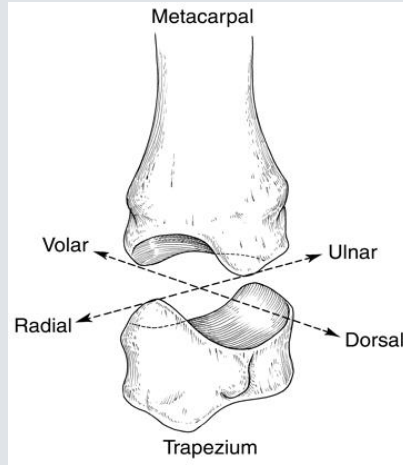
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- ❑ Participants : 195 (129 F – 66 M)
- ❑ Mean age : 52.9 Y (range 41 – 76 Y, SD 5.4)
- ❑ Cases of rhizarthrosis : 46 (35 F – 11 M)
- ❑ OR for rhizarthrosis after 10 Y FT overall exposure : 1.53 (1,03 – 2,28)



Rhizarthrosis or arthrosis of the CMC1-joint



Thumb-related symptoms and ability to perform certain activities

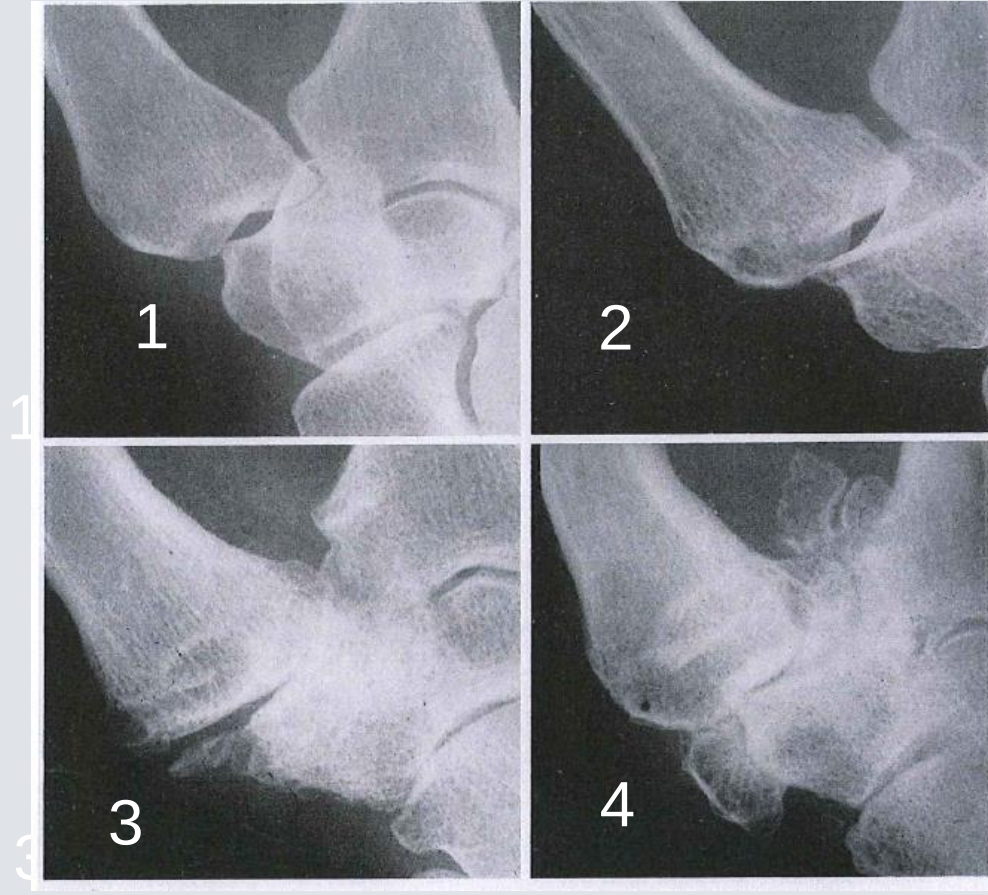
DISABILITIES OF THE ARM, SHOULDER AND HAND

THE

DASH



Kellgren-Lawrence score for rhizarthrosis



Sound advice for every OHP !

- ✓ Screen for rhizarthrosis in early stage in jobs involving repetitive and forceful gripping and pinching :
 - Ask for problems when opening jars
 - Do the Cyriax-test – forget X-ray !
- ✓ Look for other RSI in case of rhizarthrosis
- ✓ Film every repetitive job while these exist + OCRA-score
- ✓ Stay alert for atypical symptoms
- ✓ Test your own hypothesis : do some research !



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

