

RISSEr SIGN – TRENDS IN A SOUTH AFRICAN BLACK POPULATION

Ziyaad Mayet

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DECLARATION

I, Ziyaad Mayet declare that this research report is my own work. It is being submitted for the degree of Master of Medicine in the branch of Orthopaedics in the University of Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

.....

..... day of, 2009

To Nazrana,
my source of strength
and support.

PRESENTATIONS ARISING FROM THE STUDY

1. Lukhele M., Mayet Z. The Risser sign-Is there a difference in the African population? Oral presentation. 1st Biennial Congress of the South African Spine Society 28 – 31 MAY 2009, Sun City
2. Mayet Z., Lukhele M., Aboo N., Mohammed N. Risser Sign-Is there a difference in the African population? Poster presentation. SAOA 55th congress 2009, Bloemfontein

ABSTRACT

The 5 stages of the Risser sign, which chart the development of ossification of the iliac crest has been widely used as a tool to assess skeletal age and remaining spinal growth, and thereby influence scoliosis management. However, as with other markers of skeletal age, it is under the influence of genetic and environmental factors. Proof of this was given by Risser, who observed that children in warmer climates developed earlier. Numerous other authors have also shown differences for other measures of maturity between different race groups.

We tried to show that a different trend occurred in the South African Black population, as compared to published data from other population groups.

Radiographs from the Radiology records departments of various hospitals were assessed by 2 independent observers for the Risser sign. This was used to chart trends, which was compared to trends published by

Scoles *et. al.* which was recorded on the Cleveland based Brush-Bolton Collection.

The South African black population showed a trend towards starting earlier. They however completed their fusion later. This is suggestive of a longer duration of iliac ossification. Furthermore, the importance of climatic control was shown by the fact that the black & white populations mirrored each other.

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TABLE OF CONTENTS

	PAGE
Declaration	ii
Dedication	iii
Presentations arising from this work	iv
Abstract	v
Acknowledgements	vii
Table of Contents	viii
List of Figures	xi
List of Tables	xiii
Abbreviations	xiv

1.INTRODUCTION

1.1 Scoliosis	1
1.1.1 Definition	1
1.1.2 Management of scoliosis	4
1.2 Skeletal age estimation	5
1.2.1 Chronologic age	6
1.2.2 Secondary sexual characteristics	6
1.2.3 Metabolic markers	7
1.2.4 Radiological markers	8
1.2.4.1 Types of radiological markers	8
1.3 Risser Sign	11
1.3.1 What is the Risser sign ?	11
1.3.2 Difficulties with the Risser sign	13

1.4	Impact of ethnicity on skeletal age estimation	18
1.5	Aims	20
<u>2. MATERIALS & METHODS</u>		
2.1	Description of study	21
2.2	Sites of study	21
2.3	Exclusion criteria & assessment of radiographs	22
2.4	Statistical methods	23
<u>3. RESULTS</u>		
3.1	Overview of radiographs assessed	25
3.2	Interobserver variability	27
3.3	Trends in the black population	27
3.4	Trends in other population groups	29
<u>4. DISCUSSION</u>		
4.1.	Interobserver variability	34
4.2.	Trends in the black population	39
4.3.	Trends in other population groups	40
4.4.	Limitations of the study	41
<u>5. CONCLUSIONS</u>		
<u>6. REFERENCES</u>		
<u>7. APPENDICES</u>		
Appendix A	Mean chronologic age for boys & girls as found by Scoles <i>et.al.</i>	48

Appendix B	Ethics clearance certificate	49
Appendix C	Data collection sheet	50

LIST OF FIGURES

	PAGE
Figure 1 The scoliotic deformity	2
Figure 2 Measuring of Cobb's angle	3
Figure 3 The Risser stages	12
Figure 4 The Risser stages in United states & France	15
Figure 5 Radiograph with metal markers placed at ASIS & PSIS	17
Figure 6 Model seen from posteriorly with markers placed at ASIS & PSIS	17
Figure 7 Overview of radiographs assessed	26
Figure 8 Plot of mean ages at each Risser stage for girls, in each population group	32
Figure 9 Plot of mean ages at each Risser stage for boys, in each population group	33

Figure 10	Presence of bowel gas obscuring apophysis	37
Figure 11	Unossified or skipped portion of iliac apophysis	38

LIST OF TABLES

	PAGE
Table 1 Mean Chronologic Age (yrs.mo)for the black population	28
Table 2 Mean Chronologic Age (yrs.mo)for the white population	29
Table 3 Mean Chronologic Age (yrs.mo)for the Coloured population	30
Table 4 Comparison of mean chronologic age (yrs.mo) of the black populations	31

ABBREVIATIONS

PHV	Peak height velocity
PGA	Peak growth age
ASIS	Anterior superior iliac spine
PSIS	Posterior superior iliac spine
AP	Anteroposterior
PA	Posteroanterior
DHEA	Dihydro-epiandrosterone
DHEA-S	Dihydro-epiandrosterone- S
IGF-1	Interleukin growth factor-1
DSA	Digital skeletal age