ISO/TR 16840-9:2015-07 (E)

Wheelchair seating - Part 9: Clinical interface pressure mapping guidelines for seating

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Definitionsandglossary 1
2.1 Calibration 1
2.2 Coefficient of Variation (CoV) 1
2.3 Conformity 1
2.4 Contact area 2
2.5 Creep 2
2.6 Dispersion Index (DI) 2
2.7 Envelopment 2
2.8 Fomite 2
2.9 Hysteresis error 2
2.10 Immersion 3
2.11 Pressure, stresses, and forces 3
2.11.1 Axial strain () 4
2.11.2 Perpendicular force (FP) 4
2.11.3 Pressure (p) 4
2.11.4 Shear force (FS) 5
2.11.5 Shear stress () 5
2.11.6 Shear strain () 5
2.11.7 Friction force 5
2.12 Sensor saturation 6

3 Applications 6
3.1 Cushion comparison 6
3.2 Wheelchair set-up 6
3.3 Client/caregiver education 7
3.4 Dynamic activity 7
3.5 Relevance to activities of daily living 7

4 Test protocol in a clinic 7
4.1 Infection control 8
4.1.1 Wash hands 8
4.1.2 Avoid cross-infection 8
4.1.3 Protect the mat 8
4.2 Setting up 8
4.2.1 Set up mat 8
4.2.2 Prepare test protocol 8
4.2.3 Prepare client file 8
4.2.4 Be consistent 9
4.2.5 Check mat orientation 9
4.2.6 Check mat position 9
4.2.7 Smooth mat into cushion 9
4.2.8 Acclimatize test cushions 9
4.3 Transferring the client and getting the client into position 9
4.3.1 Transfer boards 9
4.3.2 Remove unnecessary items 9

4.3.3 Post-transfer checks 10
4.3.4 Consistency between tests 10
4.3.5 Settling time 10
4.4 Introducing pressure mapping to the client 10
4.4.1 Position of the screen 10
4.5 Capturing data 10
4.5.1 Identify position of bony prominences 10

4.5.2 Record one or more images 11
4.5.3 Repeat the process 11
4.5.4 Check the images 11
4.5.5 Validate the images 11

5 Documentation 11
5.1 File naming protocol 12
5.2 File location 12
5.3 Make notes immediately 12
5.4 Reporting 12
5.5 Photo documentation 12
5.6 Data back-up 12

6 Interpretation 12
6.1 An unexpected image 13
6.2 An image that is not ideal 13
6.3 The image shows nothing abnormal 13
6.4 IPM views and metrics 13
6.4.1 Isobar (2-D)/contour view 13
6.4.2 3-D/surface view 14
6.4.3 Centre of pressure (CoP) 15
6.4.4 Gradient 15
6.4.5 Asymmetry 15
6.4.6 Interpolation 16
6.4.7 Smoothing 16

7 Limitations 16
7.1 Prediction of pressure injuries 16
7.2 Microclimate 17
7.3 Clothing 17
7.4 Repeatability and relative values 17
7.5 Influence of posture 17
7.6 Sampling frequency 17

Bibliography 18