
Rehabilitation Robots: Market Shares, Strategies, and Forecasts, Worldwide, 2016 to 2022

Economies of scale and new levels of patient progress for longer durations are provided by rehabilitation robots. Rehabilitation robots target markets are hospital, clinical, and eventually homecare. Funding sources are immediately from the insurance companies, but beyond that from the health clubs that seek to promote health and wellness.

Rehabilitation Robot Table of Contents



Rehabilitation Robot Executive Summary	50
Rehabilitation Robot Market Driving Forces	50
Rehabilitation Robots Assistive Devices	53
Rehabilitation Robots Decrease the Cost of Recovery	54
Rehabilitation Robot Medical Conditions Treated	56
Robotic Modules for Disability Therapy	57
Wearable Robotics for Disability Therapy	58
Rehabilitation Robots Leverage Principles Of Neuroplasticity	60
Rehabilitation Robot Market Shares	61
Rehabilitation Robot Market Forecasts	63
1. Rehabilitation Robot Market Description and Market Dynamics	65
1.1 Stroke Rehabilitation	65
1.1.1 Stroke Protocols	65
1.1.2 Rehabilitation Medicine: New Therapies in Stroke Rehabilitation	66
1.1.3 Botulinum Toxin Injections	67
1.1.4 Constraint Induced Movement Therapy (CIMT)	68
1.1.5 Dynamic Splinting	69
1.1.6 Electrical Stimulation	69
1.1.7 Robotic Therapy Devices	69
1.1.8 Partial Body Weight-Supported Treadmill	70
1.1.9 Virtual Reality (including Wii-hab)	70
1.1.10 Brain Stimulation	71
1.1.11 Acupuncture	71
1.1.12 Mental Practice	71

1.1.13	Mirror Therapy	71	
1.1.14	Hyperbaric Oxygen Therapy	72	
1.1.15	Evidence-Based Treatment Protocols	72	
1.2	Exoskeleton Able-Bodied Industrial Applications		73
1.3	Restoring Physical Function Through Neuro-Rehabilitation After Stroke		74
1.3.1	Traumatic Brain Injury Program	77	
1.3.2	Concussion Program	77	
1.3.3	Hospital Stroke Programs Rapid Response to Create Better Outcomes		78
1.3.4	Stroke Response Process Leverage Protocols that Implement Streamlined Timely Treatment		78
1.4	Rehabilitation Physical Therapy Trends		81
1.4.1	Running with Robots	82	
1.4.2	Use Of Video Game Technology In PT	83	
1.4.3	Telemedicine Growing Trend In The Physical Therapy Space		84
1.5	Rehabilitation Robot Market Definition		85
1.5.1	Automated Process for Rehabilitation Robots	86	
1.5.2	Why Rehabilitation is Essential	92	
1.5.3	Rehabilitation Involves Relearning of Lost Functions		93
1.6	Continuous Passive Motion CPM Definition		97
1.7	Robotic Exoskeletons Empower Patient Rehabilitation Achievements		99
1.7.1	Rehabilitation Options	101	
1.7.2	Rehabilitation Robots Economies Of Scale		102
1.8	Seizing the Robotics Opportunity		103
1.8.1	Modular Self-Reconfiguring Robotic Systems		104
1.9	Public Awareness of Rehabilitation Robotics		104
1.9.1	Rehabilitation Robotics Centers Of Excellence		105

1.10	Home Medical Rehabilitation Robots	106
1.10.1	US Veterans Administration Telemedicine and Domestic Robots	106
1.10.2	Rehabilitation Robots Provide Intensive Training For Patients And Physical Relief For Therapists	108
2.	Rehabilitation Robot Market Shares and Market Forecasts	109
2.1	Rehabilitation Robot Market Driving Forces	109
2.1.1	Rehabilitation Robots Assistive Devices	112
2.1.2	Rehabilitation Robots Decrease the Cost of Recovery	113
2.1.3	Rehabilitation Robot Medical Conditions Treated	115
2.1.4	Robotic Modules for Disability Therapy	116
2.1.5	Wearable Robotics for Disability Therapy	117
2.1.6	Rehabilitation Robots Leverage Principles Of Neuroplasticity	119
2.2	Rehabilitation Robot Market Shares	120
2.2.1	AlterG Bionic Leg Customer Base	123
2.2.2	Myomo	123
2.2.3	Bionik Laboratories / Interactive Motion Technologies (IMT)	125
2.2.4	Bionik Laboratories / Interactive Motion Technologies (IMT) InMotion Robots	126
2.2.5	Hocoma Robotic Rehabilitation	127
2.2.6	Homoca Helping Patients To Grasp The Initiative And Reach Towards Recovery	128
2.2.7	Ekso Bionics Robotic Suit Helps Paralyzed Man Walk Again	132
2.2.8	Rewalk	133
2.2.9	Karman Xo-202 Standing Wheelchair Power Stand Power Drive	134
2.2.10	Patterson Medical	135
2.2.11	Rehabilitation Robot Market Share Unit Analysis	135
2.2.12	Motorized CPM Stroke Rehabilitation Equipment Market Shares	138
2.2.13	Medical Rehabilitation Robot Market Analysis	140
2.3	Rehabilitation Robot Market Forecasts	143

2.3.1	Rehabilitation Robot Unit Shipments	147
2.3.2	Rehabilitation Robots Market Segments: Lower Extremities, Upper Extremities, Neurological Training, Exoskeleton, Stroke CPM	148
2.3.3	Rehabilitation Therapy Robots: Dollars and Units, High End, Mid-Range, and Low End, Shipments	152
2.3.4	Rehabilitation Robot Market Penetration Forecasts Worldwide, 2014-2020	154
2.3.5	Market Metrics	158
2.4	Types of Conditions and Rehabilitation Treatment by Condition	159
2.4.1	Stroke	159
2.4.2	Early Rehab After Stroke	160
2.4.3	Multiple Sclerosis	160
2.4.4	Knee-Replacement Surgery	161
2.4.5	Hip	162
2.4.6	Gait Training	163
2.4.7	Sports Training	164
2.4.8	Severe Injury or Amputation	164
2.4.9	Neurological Disorders	165
2.4.10	Recovery After Surgery	166
2.5	Types of Rehabilitation Robots and Conditions Treated	166
2.5.1	Gait Training Devices / Unweighting Systems	166
2.5.2	Neuro-Rehabilitation	167
2.5.3	Prostheses	170
2.5.4	Motorized Physiotherapy CPM (Continuous Passive Motion), CAM Therapy (Controlled Active Motion) and the Onboard Protocols	170
2.5.5	Gait Training Devices / Unweighting Systems / Automated Treadmills	170
2.5.6	Rehabilitation Therapy Robotics Market	171
2.5.7	Upper Limb Robotic Rehabilitation	171
2.5.8	Shoulder Biomechanics	172
2.5.9	Exoskeletons	174

2.5.10	End-effectors	174	
2.5.11	Exoskeleton-Based Rehabilitation	174	
2.5.12	Mobility Training Level Of Distribution	175	
2.5.13	Rehabilitation Robots Cost-Benefit-Considerations	176	
2.5.14	Rehabilitation Systems	177	
2.5.15	Spinal Cord Injuries	178	
2.6	Rehabilitation Robot And Motorized CPM Equipment		179
2.7	Disease Incidence and Prevalence Analysis		182
2.7.1	Robotic Therapeutic Stroke Rehabilitation	182	
2.7.2	Aging Of The Population	183	
2.7.3	Disease Rehabilitation	184	
2.7.1	Rehabilitation of Hip Injuries	185	
2.8	Service Robots		186
2.8.1	iRobot / InTouch Health	187	
2.8.2	Next Generation Personal And Service Robotics	189	
2.9	Rehabilitation Robotics Prices		190
2.9.1	Danniflex 480 Lower Limb CPM Unit	190	
2.9.2	Shop for Patterson Kinetec CPM	191	
2.9.3	Chattanooga Atromot	197	
2.9.4	Ekso Bionics	207	
2.9.5	Interaxon Muse	208	
2.10	Rehabilitation Robotics Regional Analysis		209
2.10.1	Ekso Bionics Regional Presence	210	
3.	Rehabilitation Robots, Active Prostheses, and Exoskeleton Products		212
3.1	Lower limb Stroke Rehabilitation Devices		212

3.2 Hocoma Products	213
3.2.1 Hocoma Andago	213
3.2.2 Hocoma Supports Clinicians And Patients In Neurorehabilitation	219
3.2.3 Hocoma's Lokomat Gait Orthosis Automates Locomotion Therapy On A Treadmill	219
3.2.4 Hocoma Lokomat Intensive Locomotion Therapy	220
3.2.5 Hocoma Lokomat Training	220
3.2.6 Hocoma Lokomat Robotic Gait-Training Device Aims To Change The Part Of The Brain That Controls Motor Function	221
3.2.7 Hocoma Lokomat Functional Electrical Stimulation	223
3.2.8 Hocoma Lokomat Advanced Motion Analysis	223
3.2.9 Hocoma Rehabilitation Robotics	226
3.2.10 Hocoma ArmeoSpring for Stroke Victims	230
3.2.11 Hocoma ArmeoSpring Based On An Ergonomic Arm Exoskeleton	232
3.2.12 Hocoma Armeo®Spring Clinical Success	233
3.2.13 Hocoma Armeo Functional Therapy Of The Upper Extremities	234
3.2.14 Hocoma Armeo®Spring - Functional Arm and Hand Therapy	235
3.2.15 Hocoma Valedo Functional Movement Therapy For Low Back Pain Treatment	237
3.2.16 Hocoma Sensor-Based Back Training For Valedo®Motion	239
3.2.17 Hocoma Erigo Early Rehabilitation And Patient Mobilization	239
3.2.18 Hocoma Early Rehabilitation with Robotic Mobilization and Functional Electrical Stimulation	240
3.3 Hobart Group / MedInvest Group / Motorika	242
3.3.1 Motorika ReoGo	242
3.3.2 Hobart Motorik ReoGo Portable Platform Shoulder, Elbow, And Forearm – Improvements Maintained Over Time	243
3.3.3 Motorika ReoAmbulator Innovative Robotic Gait Training System	247
3.3.4 Motorika	248
3.4 Interactive Motor Technologies Anklebot	250
3.4.1 IMT Anklebot Evidence-Based Neurorehabilitation Technology	250

3.4.2	Interactive Motion Technologies (IMT) InMotion Robots Stroke Recovery	253
3.4.3	Biomarkers Of Motor Recovery	255
3.4.4	Robotic Tools For Neuro-Rehabilitation	255
3.4.5	Interactive Motion Technologies (IMT) Stroke — Upper Extremity Rehabilitation	256
3.4.6	Interactive Motion Technologies (IMT) Robot Provides Long Lasting Rehabilitation Improvements	257
3.4.7	InMotion Robot Medical Conditions Treated	259
3.4.8	InMotion HAND™ Robot	263
3.4.9	InMotion ARM™: Clinical Version Of The MIT-Manus	265
3.4.10	Interactive Motion Technologies (IMT) InMotion ARM™ Software	268
3.4.11	Interactive Motion Technologies (IMT) InMotion EVAL™	271
3.4.12	Interactive Motion Technologies (IMT) Maximum Shoulder Force	272
3.4.13	Interactive Motion Technologies (IMT) Long Lasting Improvements	278
3.4.14	MIT-MANUS	280
3.5	AlterG	282
3.5.1	AltgerG M320 Anti-Gravity Treadmill	282
3.5.2	AlterG® Anti-Gravity Treadmill in Action	283
3.5.3	AlterG: PK100 PowerKnee	285
3.5.4	AlterG Bionic Leg	287
3.5.5	Alterg / Tibion Bionic Leg	290
3.5.6	AlterG Bionic Leg Customer Base	292
3.5.7	AlterG M300	292
3.5.8	AlterG M300 Robotic Rehabilitation Treadmill	296
3.6	Biodex Unweighting Systems	298
3.6.1	Biodex Objective Data	299
3.6.2	Biodex BioStep® 2 Semi-Recumbent Elliptical	300
3.6.3	Biodex BioStep 2 Helps Patients and Their Therapists Achieve Multiple Rehabilitation Objectives	301
3.6.4	Older Adults / Preambulation	301

3.6.5	Cardiac Rehabilitation	301	
3.6.6	Biodex System 4 Pro	302	
3.6.7	Biodex Balance System™ SD	303	
3.6.8	Pneumex Unweighting Systems from Biodex	307	
3.7	Honda Gait Training		308
3.7.1	Honda Motor ASIMO Humanoid Robot	312	
3.8	Mobility Research		317
3.8.1	Mobility Research HugN-Go	317	
3.8.2	Mobility Research HugN-Go 350	317	
3.8.3	Mobility Research HugN-Go 250	319	
3.8.4	Mobility Research HugN-Go 100	321	
3.8.5	Mobility Research LiteGait	323	
3.9	Upper Limb Stroke Rehabilitation Devices		326
3.10	Tyromotion		327
3.10.1	Tyromotion Diego - Robotic-assisted arm-rehabilitation	335	
3.10.2	Tyromotion Therapy for Arms and Shoulders	336	
3.10.3	Tyromotion Evaluation and Therapy	337	
3.10.4	Tyromotion Pablo – Hand-Arm Rehabilitation	338	
3.10.5	Tyromotion TYMO – Therapy Board	342	
3.10.6	Tyromotion AMADEO® -For Individual Fingers or the Entire Hand Neurological Rehabilitation	345	
3.10.7	Amado® Finger-Hand Rehabilitation	347	
3.10.8	Tyromotion Amadeo® System Premier Mechatronic Finger Rehabilitation Device	351	
3.11	Myomo		353
3.11.1	Myomo MyoPro Motion G – Elbow-Wrist-Hand Orthosis	353	
3.11.2	MyoPro Myoelectric Orthotics And Prosthetics	355	
3.11.3	Myomo Neuro-Robotic Myoelectric Arm Orthosis System	356	

3.11.4	Myomo Brace For Medical Professionals Permits A Paralyzed Individual To Perform Activities Of Daily Living	357
3.11.5	Myomo EMG	359
3.11.6	Myomo mPower 1000 Indications For Use	360
3.11.7	Myomo mPower 1000 Warnings	361
3.12	Focal Meditech BV Mealtime Support and Stress Reduction: Hand Function	362
3.12.1	Focal Meditech BV Personal Robot Jaco	363
3.12.2	Focal Meditech BV Dynamic Rehabilitation Robotic Arm Supports	363
3.12.3	Focal Meditech BV Innovative Assistive Technology	366
3.13	Catholic University of America Arm Therapy Robot ARMin III	369
3.13.1	Catholic University of America Armin Iii Project Description:	370
3.13.2	Catholic University of America HandSOME Hand Spring Operated Movement Enhancer	371
3.14	Kinova Robotarm Jaco	371
3.14.1	Invacare / Kinova	375
3.15	Neurological Training	376
3.15.1	Neuro-Rehabilitation	377
3.16	Interaxon	377
3.16.1	Interaxon Muse: Brainwave Category Biometrics	381
3.16.2	Interaxon Motivates Change Of Brain	383
3.16.3	Interaxon Muse Improves Response To Stress, Lowers Blood Pressure	383
3.16.4	Interaxon Muse Gives Self-Control	384
3.16.5	Interaxon Muse Can Improve Emotional State	385
3.16.6	Interaxon Muse Extended Use Lasting Results	386
3.16.7	Interaxon Muse Types of Feedback	386
3.17	Active Prostheses	387
3.17.1	Neuronal-Device Interfaces	388

3.18	Orthocare Innovations Prosthesis	388
3.18.1	Orthocare Innovations Edison™ Adaptive Vacuum Suspension System	390
3.18.2	Orthocare Innovations Edison Adaptive Prosthesis	391
3.18.3	Orthocare Innovations Intelligent Adaptive Prosthesis	391
3.18.4	Orthocare Innovations Edison Leg and Ankle	392
3.18.5	Orthocare Innovations Europa	398
3.18.6	Orthocare Innovations Galileo Connector Technology	399
3.19	RSL Steeper Hand Prostheses	400
3.19.1	RSL Steeper Electronic Assistive Technology Devices for the Home	400
3.20	Pererro - Switch Access Control	402
3.20.1	Pererro+	402
3.20.2	RSL Steeper V3 Myoelectric Hand	404
3.21	Touch Bionics' i-limb	408
3.21.1	Touch Bionics i-limb Muscle Triggers	409
3.21.2	Touch Bionics I-Limb Methods For Switching Modes	410
3.21.3	Touch Bionics Prostheses	414
3.21.4	Touch Bionics Active Prostheses	420
3.22	RU Robots	423
3.22.1	RU Robots Sunflower Robot	425
3.22.2	RU Robots Sophisticated Interactions	426
3.22.3	RU Robots Care-o-bot	428
3.23	Instead Technologies	429
3.23.1	Instead Technologies RoboTherapist3D and 2D	430
3.23.2	Instead Technologies RoboTherapist3D	430
3.23.3	Instead Technologies Ultrasound Breast Volumes BreastExplorer	435
3.23.4	Instead Technologies Technology-Based Company	438
3.23.5	Instead Technologies Services:	440

3.24	Humanware In-Home Rehabilitation	441
3.25	Exoskeletons	441
3.25.1	Muscle Memory 442	
3.26	Ekso Bionics	443
3.26.1	Ekso Bionics Wearable Bionic Suit 444	
3.26.2	Ekso Gait Training Exoskeleton Uses 451	
3.26.3	Ekso Bionics Rehabilitation 455	
3.26.4	Ekso Bionics Robotic Suit Helps Paralyzed Man Walk Again 458	
3.27	Rewalk	459
3.28	Permobil F5 Corpus VS Stand Sequence	461
3.29	Karman Xo-202 Standing Wheelchair Power Stand Power Drive	462
3.30	Berkeley Robotics Laboratory Exoskeletons	465
3.30.1	Berkeley Robotics Austin 465	
3.30.2	Berkley Robotics and Human Engineering Laboratory ExoHiker 466	
3.30.3	Berkley Robotics and Human Engineering Laboratory ExoClimber 468	
3.30.4	Berkeley Lower Extremity Exoskeleton (BLEEX) 470	
3.30.5	Berkley Robotics and Human Engineering Laboratory Exoskeleton 470	
3.31	Reha-Stim Gait Trainer GT I	472
3.31.1	Reha-Stim Gait Trainer Target Market 475	
3.31.2	Reha-Stim Bi-Manu-Track 476	
3.31.3	Reha-Stim Bi-Manu-Track Hand and Wrist 476	
3.32	Exoskeleton Designed by CAR	479
3.33	CAREX Upper Limb Robotic Exoskeleton	480
3.34	Egto Tech	482
3.34.1	Egto Tech Luna Dynamic Resistance 483	

3.34.2	Egto Tech Luna Objective Diagnostics	483
3.35	Motorized Physiotherapy CPM (Continuous Passive Motion), CAM Therapy (Controlled Active Motion) and the Onboard Protocols	484
3.35.1	Movement Of Synovial Fluid To Allow For Better Diffusion Of Nutrients Into Damaged Cartilage	486
3.36	Chattanooga Active-K CPM (Continuous Passive Motion)	487
3.36.1	Chattanooga OptiFlex® 3 Knee Continuous Passive Motion (CPM)	497
3.36.2	Continuous Passive Motion Machines (CPM)	499
3.36.3	Chattanooga OptiFlex Ankle Continuous Passive Motion (CPM)	501
3.36.4	Chattanooga OptiFlex S Shoulder Continuous Passive Motion (CPM)	504
3.36.5	Chattanooga OptiFlex Elbow Continuous Passive Motion (CPM)	507
3.36.6	Chattanooga OptiFlex S Shoulder Continuous Passive Motion (CPM)	510
3.37	Paterson Kinetec CPM	512
3.37.1	Paterson / Kinetec Spectra Knee CPM	513
3.38	Global Medical	516
3.39	Furniss Corporation	520
3.39.1	Furniss Corporation Continuous Passive Motion DC2480 Knee CPM	526
3.40	Danniflex	528
3.40.1	Danniflex 480 Lower Limb CPM Unit	529
3.41	Rehab-Robotics Company	531
3.41.1	Rehab-Robotics Hand of Hope	533
3.41.2	Rehab-Robotics Hand & Arm Training	538
3.42	Bioxtreme	540
3.43	Corbys	541
3.43.1	Corbys System Overview	542

3.44	Swtotek Motion Maker	546
4.	Rehabilitation Robots Technology	547
4.1	Robotic Actuator Energy	547
4.1.1	Elastic Actuators	548
4.1.2	InMotion Robots Technology	549
4.2	Human Motor Error Enhancement Technology	550
4.2.1	Enhancing a Motor Error Improves Motor Skills	550
4.2.2	Adaptation to Error Enhancing Forces	550
4.2.3	Bioxtreme's Error Enhancement Technology Potential Applications	551
4.3	Rehabilitation Robotic Risk Mitigation	552
4.4	Rehabilitation Robot Multi-Factor Solutions	556
4.4.1	Biometallic Materials Titanium (Ti) and its Alloys	556
4.5	Berkley Robotics and Human Engineering Laboratory	557
4.6	Rehabilitation Robot Automated Technique	557
4.6.1	InMotion Robots Technology	559
4.7	HEXORR: Hand EXOskeleton Rehabilitation Robot	561
4.8	ARMin: Upper Extremity Robotic Therapy	566
4.9	HandSOME: Hand Spring Operated Movement Enhancer	566
4.10	Cognitive Science	568
4.11	Lopes Gait Rehabilitation Device	569
4.12	Artificial Muscle	570
4.13	ReWalk™ Exoskeleton Suit	571

5. Rehabilitation Robot Company Profiles	573
5.1 AlterG	573
5.1.1 AlterG M300 Customers	576
5.1.2 AlterG M300	581
5.1.3 AlterG™ Acquires Tibion Bionic Leg	582
5.2 Aretech	583
5.3 Berkley Robotics and Human Engineering Laboratory	586
5.4 Biodex	590
5.4.1 Biodex Clinical Advantage	591
5.5 Bioness	592
5.6 Bionik Laboratories / Interactive Motion Technologies (IMT)	592
5.6.1 Bionik Laboratories Acquires Interactive Motion Technologies, Inc. (IMT)	593
5.6.2 InMotion Robots for NHS study in the UK	593
5.6.3 Interactive Motion Technologies (IMT) InMotion Robots	594
5.7 Bioxtreme	601
5.8 Breg	603
5.9 Catholic University of America HandSOME Hand Spring Operated Movement Enhancer	604
5.10 Claflin Rehabilitation Distribution	604
5.11 DJO Global	612
5.11.1 DJO Global Trademarks, Service Marks And Brand Names	615
5.11.2 DJO Global Business Activities	615
5.11.3 DJO / Chattanooga	616
5.11.4 Chattanooga OptiFlex® Knee Continuous Passive Motion (CPM)	618
5.12 Ekso Bionics	620

5.12.1	Ekso Rehabilitation Robotics	622	
5.12.2	Ekso GT	622	
5.12.3	Ekso Fourth Quarter And Full Year 2015 Financial Results	626	
5.12.4	Ekso Bionics Seeks To Lead The Technological Revolutions	626	
5.12.5	Ekso Bionics HULC Technology Licensed to the Lockheed Martin Corporation	628	
5.12.6	Ekso Bionics Regional Presence	628	
5.12.7	Ekso Bionics Customers	629	
5.12.8	Ekso and Lockheed	637	
5.13	Fanuc		637
5.13.1	Fanuc Revenue	638	
5.13.2	Fanuc - Industrial Robot Automation Systems and Robodrill Machine Centers	640	
5.14	Focal Meditech		640
5.14.1	Focal Meditech BV Collaborating Partners:	642	
5.15	Hobart Group / Motorika		643
5.15.1	Motorika	644	
5.16	Hocoma		645
5.16.1	Hocoma Revenue	649	
5.16.2	Hocoma Partnership With The Slovenian Software Company XLAB	650	
5.17	Honda Motor		650
5.17.1	Honda Motor Revenue	651	
5.17.2	Honda Automobile Business	652	
5.17.3	Honda Walk Assist	654	
5.17.4	Honda Prototype Stride Management Motorized Assist Device	656	
5.17.5	Honda Builds Unique Transportation Exoskeleton Device Market	657	
5.18	Instead Technologies		658
5.18.1	Instead Technologies Services:	660	

5.19	Interaxon	661
5.20	iRobot	662
5.20.1	iRobot Home Robots	663
5.20.2	iRobot Defense and Security: Protecting Those In Harm’s Way	664
5.20.3	iRobot Remote Presence: Brings Meaningful Communication	664
5.20.4	iRobot STEM	666
5.20.5	iRobot Internet of Things	667
5.20.6	iRobot / InTouch Health	667
5.21	Karman	670
5.22	KDM	672
5.23	Kinova	673
5.23.1	Kinova JACO	673
5.24	KLC Services	673
5.25	Medi	674
5.26	Mobility Research	674
5.27	MRISAR	676
5.28	Myomo	676
5.28.1	Myomo mPower 1000	677
5.29	Orthocare Innovations	678
5.29.1	Orthocare Innovations Adaptive Systems™ For Advanced O&P Solutions.	678
5.29.2	Orthocare Innovations Company Highlights	679
5.30	Patterson Companies, Inc.	680
5.30.1	PMI Acquires Mobilis Healthcare	681
5.30.2	Patterson Companies Medical (PMI) Business Segments	682

5.31	Patterson Medical / Madison Dearborn Partners	683
5.31.1	Patterson Medical Strategy	683
5.31.2	Patterson Medical Brands	684
5.31.3	Patterson Medical Rehabilitation Supply	685
5.31.4	Patterson Medical International Operations	687
5.31.5	Patterson Medical Consumables	689
5.31.6	Patterson Medical Equipment and Software	689
5.32	ProMed Products Xpress	690
5.33	Rehab-Robotics Company	690
5.34	Reha-Stim	691
5.34.1	Reha-Stim Support Patients In Restoring And Improving Gait Function	691
5.34.2	Reha-Stim Support Patients In Restoring Arm And Hand Function	691
5.35	Reha Technology	692
5.36	ReWalk Robotics	695
5.37	Robotdalen	696
5.38	RSL Steeper	698
5.39	RU Robots	700
5.40	Secom	701
5.40.1	Secom Co.Ltd MySpoon	702
5.40.2	Secom Co.Ltd MySpoon Manual Mode	702
5.40.3	Secom Co.Ltd MySpoon Semi-automatic Mode	704
5.40.4	Secom Co. Ltd MySpoon Automatic Mode	706
5.41	Sunrise Medical	707
5.41.1	Sunrise Medical Quality Policy	709
5.41.2	Sunrise Medical Whitmyer Biomechanics	709

5.42	Touch Bionics	712
5.43	Tyromotion GmbH	714
5.43.1	Tyromotion GmbH Network	715
5.44	Other Rehabilitation Robot Companies	717
5.44.1	Additional Rehabilitation Robots	734
5.44.2	Selected Rehabilitation Equipment Companies	737
5.44.3	Spinal Cord Treatment Centers in the US	751
About The Company		768
Research Methodology		769

List of Tables and Figures

Table ES-1	51
Rehabilitation Robotics Products Market Driving Factors:	51
Table ES-2	55
Rehabilitation Robot Market Driving Forces	55
Table ES-3	56
Rehabilitation Robot Medical Conditions Treated	56
Table ES-4	57
Stroke Rehabilitation Guidelines For Interactive Robotic Therapy	57
Table ES-5	58
Extremity Rehabilitation Robot Technology	58
Table ES-6	59

Health Care Conditions Treated With Rehabilitation Wearable Robotics	59
Table ES-7	61
Robotic Technologies Leverage Principles Of Neuroplasticity	61
Figure ES-8	62
Rehabilitation Robot Market Shares, Dollars, Worldwide, 2015	62
Figure ES-9	64
Rehabilitation Robot Market Forecasts Dollars, Worldwide, 2016-2022	64
Table 1-1	67
Stroke Rehabilitation Technology Modalities	67
Table 1-2	75
Neuro-Rehabilitation patient Conditions Addressed	75
Table 1-3	76
Neuro-rehabilitation Services	76
Table 1-4	79
Stroke Response Process Leverage Protocols Interdisciplinary Teams	79
Table 1-5	80
Stroke Treatment State-Of-The-Art, Full-Service Stroke Treatment Facilities	80
Table 1-6	88
Robotic Rehabilitation Devices Automated Process Benefits	88
Table 1-7	91
Robotic Rehabilitation Devices Emerging Technologies	91
Table 1-8	92
Robotic Rehabilitation Wearable Devices Benefits	92
Table 1-9	94
Rehabilitation Involves Relearning Lost Function	94
Table 1-10	95
Rehabilitation Lost Function Relearning Initiatives	95
Table 1-11	98
CPM Functions:	98
Table 1-12	99
CPM Use Indications:	99

Table 2-1	110
Rehabilitation Robotics Products Market Driving Factors:	110
Table 2-2	114
Rehabilitation Robot Market Driving Forces	114
Table 2-3	115
Rehabilitation Robot Medical Conditions Treated	115
Table 2-4	116
Stroke Rehabilitation Guidelines For Interactive Robotic Therapy	116
Table 2-5	117
Extremity Rehabilitation Robot Technology	117
Table 2-6	118
Health Care Conditions Treated With Rehabilitation Wearable Robotics	118
Table 2-7	120
Robotic Technologies Leverage Principles Of Neuroplasticity	120
Figure 2-8	121
Rehabilitation Robot Market Shares, Dollars, Worldwide, 2015	121
	121
Table 2-9	122
Rehabilitation Robot Market Shares, Dollars, Worldwide, 2015	122
Table 2-10	127
Hocoma Robotic Rehabilitation Used In Rehabilitation Medicine:	127
Figure 2-11	130
Homoca Continuum of Rehabilitation	130
Figure 2-12	131
Comparison of the Hocoma Armeo Products	131
Figure 2-13	134
Karman Xo-202 Standing Wheelchair Power Stand Power Drive	134
Table 2-14	136
Rehabilitation Therapy Robots Market Shares, Units, Worldwide, 2014	136
Table 2-15	137
Rehabilitation Therapy Robots Market Shares, Units, Worldwide, 2015	137
Table 2-16	139

Motorized CPM Stroke Rehabilitation Equipment Market Shares, Unit and Dollars, Worldwide, 2015	139
Figure 2-17	144
Rehabilitation Robot Market Forecasts Dollars, Worldwide, 2016-2022	144
Table 2-18	145
Rehabilitation Robots Market Forecasts, Dollars, Shipments, Worldwide, 2016-2022	145
Table 2-19	147
Rehabilitation Robots: Units Shipments, Worldwide, 2016-2022	147
Table 2-20	149
Rehabilitation Robot Market Segments, Lower Extremities, Upper Extremities, Neurological Training, Exoskeleton, Stroke CPM, Dollars, Worldwide, 2015-2021	149
Table 2-21	150
Rehabilitation Robot Market Segments, Lower Extremities, Upper Extremities, Neurological Training, Exoskeleton, Stroke CPM, Percent, Worldwide, 2015-2021	150
Table 2-22	151
Rehabilitation Robots Market Segments	151
Table 2-23	152
Rehabilitation Extremity Physical Therapy Robots Market Forecasts: Dollars and Units, High End, Mid-Range, and Low End, Shipments, Worldwide, 2016-2022	152
	153
Figure 2-24	154
Rehabilitation Robots: Facility Market Penetration Forecasts, Units, Worldwide, 2014-2020	154
Table 2-25	155
Rehabilitation Facility Robot Market Penetration Forecasts Worldwide, 2016-2022	155
Table 2-26	156
Rehabilitation Small and Mid-Size Facility Robot Market Penetration Forecasts Worldwide, 2014-2020	156
Figure 2-27	162
Chattanooga OptiFlex® 3 Knee Continuous Passive Motion (CPM) Device	162
Table 2-28	178
Rehabilitation Robot Categories	178
Table 2-29	179
Spinal Cord Injury Causes Worldwide, 2014	179

Table 2-30	180
Motorized CPM Stroke Rehabilitation Equipment Market Shares, Unit and Dollars, Worldwide, 2015	180
Table 2-31	181
Rehabilitation Robot CPM Market Segments, Worldwide, 2015-2021	181
Table 2-32	183
US Stroke Incidence Numbers	183
Table 2-33	185
Physical Therapy Enhances Recovery After Hip Injury	185
Figure 2-34	188
iRobot / InTouch Health RP-VITA	188
Figure 2-35	193
Chattanooga Continuous Passive Motion	193
Figure 2-36	209
Rehabilitation Robot Regional Market Segments, Dollars, 2015	209
Table 2-37	210
Rehabilitation Robot Regional Market Segments, 2015	210
Figure 2-38	211

Ekso Bionics Regional Presence



Source: Ekso Bionics.	211
Lower Limb Stroke Rehabilitation Devices	212
Figure 3-1	213
Hocoma Andago	213
Figure 3-2	215
Hocoma Lokomat Pro	215
Table 3-3	216
Hocoma Patient Rehabilitation Conditions Addressed	216
Table 3-4	217
Hocoma Robotic Improvements to Rehabilitation	217
Table 3-5	218
Hocoma Products	218
Table 3-6	218
Hocoma Rehabilitation Functional Therapy	218
Table 3-7	220
Robotic Legs Working For Improving Cerebral Palsy	220
Figure 3-8	224
Hocoma Automates Locomotion Therapy On A Treadmill	224

Figure 3-9	225
Hocoma Lokomat Lower Extremity Robot	225
Table 3-10	227
Hocoma Rehabilitation Robot Systems	227
Figure 3-11	228
Hocoma Armeo Arm Robot Systems	228
Figure 3-12	229
Hocoma Lokomats Robot	229
Figure 3-13	230
Hocoma ArmeoSpring for Stroke Victims	230
Figure 3-14	231
Hocoma ArmeoSpring for Children	231
Figure 3-15	234
Hocoma Armeo Power Robotic Arm Exoskeleton	234
Figure 3-16	236
Clinical Example of Patients Using the Hocoma Armeo®Spring	236
Table 3-17	237
Hocoma Valedo Functional Lower Back Movement Therapy	237
Table 3-18	238
Hocoma Valedo®Motion Low Back Pain Therapy Advantages	238
Figure 3-19	239
Hocoma Erigo®	239
Table 3-20	241
Hocoma Erigo Advantages of Early Rehabilitation	241
Figure 3-21	242
Motorika ReoGo	242
Table 3-22	245
Motorik ReoGo™ Therapist Benefits:	245
Table 3-23	246
Motorik ReoGo™ Patient Benefits:	246
Figure 3-24	247
Motorika ReoAmbulator	247

Figure 3-25	249
Motorika ReoAmbulator and Gait Training Devices	249
Figure 3-26	250
Interactive Motor Technologies Anklebot exoskeletal robotic system Design Principals	250
Figure 3-27	252
Interactive Motor Technologies Anklebot Walking Improvement	252
Figure 3-28	254
Interactive Motion Technologies (IMT) InMotion Biomarkers Aid Stroke Recovery	254
Table 3-29	259
Interactive Motion Technologies (IMT) InMotion Robot Medical Conditions Treated	259
Table 3-30	260
Interactive Motion Technologies (IMT) InMotion Robot Medical Technology	260
Table 3-31	261
Interactive Motion Technologies (IMT) Clinical Studies Performed With The InMotion ARM™	261
Table 3-32	262
InMotion Robots Research Positioning	262
Figure 3-33	263
InMotion HAND™	263
Figure 3-34	264
InMotion HAND™ Robot	264
Table 3-35	266
Interactive Motion Technologies (IMT) InMotion HAND™ Robot Functions	266
Table 3-36	267
Interactive Motion Technologies (IMT) InMotion HAND™ Robot	267
Table 37	268
Interactive Motion Technologies (IMT) InMotion ARM™ Software Functions	268
Figure 3-38	269
Interactive Motion Technologies (IMT) 2D Gravity Compensated Therapy Is More Effective Than 3D Spatial Therapy	269
Figure 3-39	270
Measurements Show Interactive Motion Technologies (IMT) 2D Gravity Compensated Therapy Is More Effective Than 3D Spatial Therapy	270
Table 3-40	271

Interactive Motion Technologies (IMT) InMotion EVAL Aims	271
Table 3-41	272
Interactive Motion Technologies (IMT) InMotion EVAL Quantifiable Measures:	272
Figure 3-42	273
6 Degree-Of-Freedom Force-Torque Sensor Monolithic Aluminum Device Visualization	273
Figure 3-43	274
Interactive Motion Technologies (IMT) Performance Feedback Metrics	274
Table 3-44	275
Interactive Motion Technologies (IMT) InMotion ARM™ Specifications	275
Dimensions	275
Figure 3-45	276
Interactive Motion Technologies (IMT) Sample Circle Plots For A Stroke Patient At Admission	276
Figure 3-46	277
Interactive Motion Technologies (IMT) Sample Circle Plots For A Stroke Patient At Discharge	277
Figure 3-47	282
AltgerG M320 Anti-Gravity Treadmill	282
Table 3-48	283
AlterG® Anti-Gravity Treadmill Functions	283
Table 3-49	284
AlterG Therapy Functions	284
Figure 3-50	285
AlterG: PK100 PowerKnee	285
Figure 3-51	288
AlterG Bionic Neurologic And Orthopedic Therapy Leg	288
Figure 3-52	290
Tibion Bionic Leg	290
Figure 3-53	293
AlterG M300 Robotic Rehabilitation Treadmill	293
Figure 3-54	294
AlterG M300 Robotic Leg, Knee and Thigh Rehabilitation Treadmill	294
Table 3-55	295
AlterG Anti-Gravity Treadmill Precise Unweighting Technology Patient Rehabilitation Functions	295

Figure 3-56	297
AlterG Anti-Gravity Treadmill Heals patient Faster	297
Table 3-57	298
Biodex Dynamometer Target Markets	298
Figure 3-58	300
Biodex BioStep® 2 Semi-Recumbent Elliptical	300
Figure 3-59	302
Biodex System 4 Pro	302
Figure 3-60	304
Biodex Balance System SD	304
Figure 3-61	305
Biodex Balance System SD Features	305
Figure 3-62	307
Biodex Pneumex Unweighting Systems	307
Figure 3-63	309
Honda Walk assist	309
Figure 3-64	310
Honda Stride Management	310
Figure 3-65	312
Honda Walk Assist Device Specifications	312
Figure 3-66	313
Honda ASIMO	313
Figure 3-66	314
Honda ASIMO Front Position	314
Figure 3-67	315
Honda ASIMO Dimensions and Weight	315
Figure 3-68	316
Honda ASIMO Intelligence Features	316
Figure 3-69	317
Mobility Research HugN-Go 350	317
Table 3-70	318
Mobility Research HugN-Go 350 Supported Ambulation Device	318

Figure 3-71	319
Mobility Research HugN-Go 250	319
Figure 3-72	320
Mobility Research HugN-Go 250 Features	320
Figure 3-73	321
Mobility Research HugN-Go 100	321
Figure 3-71	322
Mobility Research HugN-Go 100 Features	322
Figure 3-72	323
Mobility Research LiteGait Solution for Gait Therapy	323
Table 3-73	324
Mobility Research LiteGait Advanced Solutions For Gait Therapy	324
Table 3-74	326
Upper Limb Stroke Rehabilitation Devices	326
Figure 3-75	335
Tyromotion Diego	335
Table 3-76	337
Advantages of Rehabilitation Robot Therapy with Tyromotion DIEGO	337
Figure 3-77	338
Tyromotion Pablo	338
Table 3-78	340
Tyromotion PABLO Multiball Rehabilitation Robot Functions: Versatility	340
Table 3-79	341
Tyromotion Pablo Advantages of Hand-Arm-Rehabilitation	341
Figure 3-80	342
Tyromotion TYMO	342
Table 3-81	344
Tyromotion TYMO Support Features	344
Figure 3-82	346
Tyromotion Amadeo® System For Neurological Rehabilitation	346
Table 3-83	349
Amado® Individual Fingers Or The Entire Hand Rehabilitation Advantages	349

Figure 3-84	350
Tyromotion AMADEO® -For Neurological Rehabilitation	350
Table 3-85	351
Tyromotion AMADEO® -For Neurological Rehabilitation	351
Table 3-86	352
Tyromotion Amadeo® Benefits	352
Figure 3-87	353
Myomo MyoPro Motion G – Elbow-Wrist-Hand Orthosi	353
Table 3-88	355
MyoPro Motion-G Elbow-Wrist-Hand Orthosis Benefits	355
Table 3-89	356
MyoPro Motion-G Clinical Criteria	356
Table 3-90	358
Myomo mPower 1000 Indications	358
Table 3-91	358
Myomo mPower 1000 Contraindications	358
Table 3-92	365
Focals Meditech BV Models:	365
Table 3-93	366
Focal Meditech BV Assistive Technology Types	366
Table 3-94	367
Focal Meditech BV High End Assistive Technology	367
Table 3-95	368
Focal Meditech Products for Robotic Rehabilitation	368
Figure 3-96	369
ARMin III Robot For Movement Therapy Following Stroke	369
Figure 3-97	372
Kinova Robotarm Jaco	372
Figure 3-98	374
Kinova Jaco Rehabilitation Hand	374
Figure 3-99	375
Invacare Partnered with Kinova to Facilitate Use of the Jaco	375

Figure 3-100	376
Invacare Kinova Robotarm Broad Product Line	376
Figure 3-101	378
InteraXon Muse Headband	378
Figure 3-102	380
Interaxon Finely Calibrated Brain Wave Sensors	380
Figure 3-103	382
InteraXon Measuring Brainwaves	382
Figure 3-104	387
Lower Limb Prosthetic Designed By The Center For Intelligent Mechatronics	387
Figure 3-105	389
Orthocare Innovations Prosthesis	389
Figure 3-106	390
Orthocare Innovations Edison Prosthesis Ankle and Foot	390
Figure 3-107	393
Orthocare Innovations Edison Leg and Ankle	393
Figure 3-108	395
Orthocare Innovations Prosthetic Foot That Adjusts Automatically	395
Figure 3-109	396
Orthocare Innovations Proshthetic Foot That Fits	396
Figure 3-110	397
Orthocare Innovations Proshthetic Foot That Can Be Used for Hiking	397
Figure 3-111	399
Orthocare Innovations	399
Figure 3-112	403
RSLSteeper Pererro+	403
Table 3-113	404
RSLSteeper Pererro+ Key Features:	404
Figure 3-114	405
RSL Steeper Bebionic's Standard Glove	405
Figure 3-115	407
RSL Steeper Prosthesis Hand	407

Figure 3-116	408
Touch Bionics' i-limb Functions	408
Table 3-117	409
Touch Bionics i-limb Muscle Triggers	409
Figure 3-118	413
Touch Bionics Quick Grips	413
Figure 3-119	414
Touch Bionics Prostheses	414
Figure 3-120	418
Touch Bionics Active Prostheses	418
Figure 3-121	421
Touch Bionics Active prostheses	421
Table 3-122	422
Touch Bionics Products	422
Table 3-123	424
RU Robots Core Technologies And Competencies	424
Figure 3-124	425
RU Robots Advanced Robotics	425
Figure 3-126	427
RU Robots Sophisticated Interactions	427
Figure 3-127	428
RU Robots Care-o-bot Large Service Robot	428
Table 3-128	431
Instead Technologies Advantages of RoboTherapist3D Therapy:	431
Figure 3-129	432
Instead Technologies RoboTherapist 3D RT3D Arm	432
Figure 3-130	432
Instead Technologies RoboTherapist 3D RT3D Cup	432



	432
Figure 3-131	433
Instead Technologies RT3D Hand	433
Figure 3-132	434
Instead Technologies Robotherapist 3D RT3D Ring Structure	434
Figure 3-133	435
Instead Technologies Ultrasound Breast Volumes. BreastExplorer	435
Figure 3-134	436
Instead Technologies Ultrasound Breast Volumes BreastExplorer Handheld Device	436
Figure 3-135	437
Instead Technologies Ultrasound Breast Volumes BreastExplorer Screen Display	437
Table 3-136	439
Instead Technologies Research:	439
Table 3-137	440
Instead Technologies Consultancy Services:	440
Figure 3-138	447
Esko Technology	447
Figure 3-139	449
Ekso Bionics Gait Training	449
Figure 3-140	450
Ekso Bionics Gait Training Functions	450
Table 3-141	451
Ekso Gait Training Exoskeleton Functions	451

Table 3-142	452
Ekso Gait Training Exoskeleton Functions	452
Figure 3-143	453
Ekso Bionics Step Support System	453
Table 3-144	454
Ekso Bionics Operation Modes	454
3.26.3 Ekso Bionics	455
Figure 3-145	456
Figure 3-146	457
Ekso Bionics Bionic Suit	457
Figure 3-147	460
Rewalk-Robotics-Personal Support	460
Figure 3-148	461
Permobil F5 Corpus VS Stand Sequence	461
Figure 3-149	462
Karman Xo-202 Standing Wheelchair Power Stand Power Drive	462
Table 3-150	464
Karman Xo-202 Standing Wheelchair Power Stand Power Drive Features	464
Figure 3-151	465
Berkeley Robotics Austin	465
Figure 3-152	467
Berkley Robotics and Human Engineering Laboratory ExoHiker	467
Figure 3-153	469
Berkley Robotics and Human Engineering Laboratory ExoClimber	469
Table 3-154	470
Berkley Robotics and Human Engineering Laboratory Exoskeleton	470
Figure 3-155	472
Reha-Stim Gait Trainer GT I	472
Figure 3-156	474
Reha-Stim Gait Trainer Improves The Patient Ability To Walk Through Continuous Practice	474
Figure 3-157	477
Reha-Stim Bi-Manu-Track Hand and Wrist Rehabilitation Device	477

Figure 3-158	478
Reha-Stim Gait Trainer GT I Harness	478
Figure 3-159	485
Motorized Physiotherapy Controlled Mobilization Goals of phase 1 rehabilitation	485
Table 3-160	486
Continuous Passive Motion (CPM) Device Benefits Following Knee Arthroplasty	486
Figure 3-161	487
Chattanooga CPM	487
Table 3-162	488
Chattanooga Active-K Functions	488
Figure 3-163	489
DJO Chattanooga Active-K	489
Figure 3-164	490
Chattanooga Active-K Motorized Physiotherapy Unit Integration Benefits	490
Figure 3-165	491
Chattanooga Active-K Motorized Physiotherapy Controlled Mobilization	491
Figure 3-166	492
Chattanooga Active-K Motorized Physiotherapy CPM (Continuous Passive Motion)	492
Figure 3-167	493
Chattanooga Active-K Motorized Physiotherapy Controller	493
Figure 3-168	494
DJO Chattanooga Active-K Features:	494
Table 3-169	495
Chattanooga Active-K Motorized Physiotherapy Therapeutic Modes	495
Figure 3-170	496
Chattanooga Active-K Motorized Physiotherapy Therapeutic Benefits	496
Figure 3-171	497
Chattanooga OptiFlex® 3 Knee Continuous Passive Motion (CPM) Device	497
Table 3-172	498
Chattanooga Optiflex Knee CPM Unique Features:	498
Table 3-173	499
Chattanooga Optiflex CPM Use While Resting	499

Table 3-174	500
Chattanooga Optiflex Knee CPM Standard Functions:	500
Table 3-175	501
Chattanooga OptiFlex® 3 Knee Continuous Passive Motion (CPM) Specifications:	501
Figure 3-176	502
Chattanooga OptiFlex® 3 Ankle Continuous Passive Motion (CPM)	502
Table 3-177	503
Chattanooga Optiflex Ankle CPM Features:	503
Table 3-178	504
Chattanooga Optiflex Ankle CPM Specifications:	504
Table 3-179	505
Chattanooga Optiflex Shoulder CPM Features:	505
Figure 3-180	506
Chattanooga OptiFlex® 3 Elbow Continuous Passive Motion (CPM)	506
Table 3-181	507
Chattanooga OptiFlex Elbow CPM Features:	507
Figure 3-182	508
Chattanooga OptiFlex® 3 Elbow Continuous Passive Motion (CPM)	508
Table 3-183	508
Chattanooga OptiFlex® 3 Elbow Continuous Passive Motion (CPM) Specifications:	508
Figure 3-184	509
Chattanooga OptiFlex® 3 Elbow Continuous Passive Motion (CPM) Flexion	509
Figure 3-185	510
Chattanooga OptiFlex S Shoulder Continuous Passive Motion (CPM)	510
Table 3-186	511
Chattanooga OptiFlex Shoulder CPM Features:	511
Figure 3-187	513
Paterson Kinetec Knee CPM	513
Table 3-188	514
Paterson Kinetec Spectra Knee CPM Features:	514
Table 3-189	515
Paterson Kinetec Spectra Knee CPM Treatment Modes	515

Figure 3-190	516
Global Medical CPM device	516
Table 3-191	517
Global Medical CPM device Features	517
Figure 3-192	518
Global Medical Handheld Controller	518
Figure 3-193	521
Furniss Corporation Model 1800™ Knee CPM	521
Table 3-194	523
Furniss Corporation CPM 1800 Features	523
Figure 3-195	524
Furniss Corporation CP	524
Figure 3-196	525
Furniss Corporation Phoenix Model 1850 Knee CPM	525
Figure 3-197	526
Furniss Corporation Continuous Passive Motion DC2480 Knee CPM	526
Figure 3-198	529
Danniflex 480 Lower Limb CPM Unit	529
Table 3-199	530
Danniflex Lower Limb CPM Features	530
Figure 3-200	531
Rehab-Robotics Company Hand of Hope Therapeutic Device	531
Figure 3-201	532
Rehab-Robotics Repetitive Training System	532
Table 3-202	534
Rehab-Robotics Hand of Hope Movement Control	534
Figure 3-203	536
Rehab-Robotics Modes Provide Different Levels Of Assistance In Movement Of Patient’s Hand	536
Figure 3-204	537
Rehab-Robotics Different Modes	537
Figure 3-205	538
Rehab-Robotics Arm Training	538

Table 3-206	539
Rehab-Robotics Hand of Hope Modes	539
Figure 3-207	540
Bioxtreme Robotic Rehabilitation System	540
Figure 3-208	541
Corbys Rehabilitation Robot	541
Figure 3-209	543
Corbys Rehabilitation System	543
Figure 3-210	544
Corbys Rehabilitation Orthosis Actuation Test Stand	544
Figure 3-211	545
Corbys Mobile Robotic Gait Rehabilitation System	545
Figure 3-212	546
Swtotek Leg Orthosis of Motion Maker	546
Table 4-1	552
Rehabilitation Robot System Concerns Addressed During System Design	552
Table 4-5	559
Rehabilitation Robots Software Functions	559
Table 4-6	560
InMotion Robots Immediate Interactive Response Sets	560
Table 4-7	562
HEXORR: Hand Exoskeleton Rehabilitation Robot Technology Benefits	562
Table 4-8	563
HEXORR: Hand Exoskeleton Rehabilitation Robot Technology Monitoring	563
Table 4-9	564
HEXORR: Hand EXOskeleton Rehabilitation Robot Treatment Benefits	564
Table 4-10	565
HEXORR: Hand EXOskeleton Rehabilitation Robot Technology Force and Motion Sensor Benefits	565
Figure 4-11	567
Hand Spring Operated Movement Enhancer	567
Figure 4-12	568
Hand Spring Robot Operated Movement Enhancer	568

Table 5-1	573
AlterG Anti-Gravity Treadmills Features	573
Built On Differential Air Pressure Technology	573
Table 5-2	574
AlterG Anti-Gravity Treadmills Target Markets	574
Table 5-3	575
AlterG Product Positioning	575
Figure 5-4	577
Selected US Regional AlterG M300 Customer Clusters	577
Figure 5-5	582
AlterG / Tibion Bionic Leg	582
Figure 5-6	584
Afetech ZeroG Gait & Balance	584
Figure 5-7	585
Aretech Rehabilitation Robot	585
Table 5-8	588
Berkley Robotics and Human Engineering Laboratory Research Work	588
Table 5-9	589
Berkley Robotics and Human Engineering Laboratory Research Work	589
Figure 5-10	602
Bioxtreme Robotics Rehabilitation For Cerebral Stroke Or Traumatic Brain Injuries (TBI) On Error Enhancement Technology	602
Figure 5-11	603
Breg Home Therapy CPM Continuous Passive Motion Practice Kits	603
Table 5-12	613
DJO Rehabilitation Product Target Markets	613
Table 5-13	614
DJO Rehabilitation Product Targets Care Givers	614
Figure 5-14	629
Ekso Bionics Regional Presence	629
Table 5-15	641
FOCAL Meditech BV Products:	641
Table 5-16	642

Focal Meditech BV Collaborating Partners:	642
Table 5-17	647
Hocoma Robotic Rehabilitation Used In Rehabilitation Medicine:	647
Table 5-18	648
Hocoma Therapy Solutions Treatments	648
Table 5-19	653
Honda’s Principal Automobile Products	653
Figure 5-20	655
Honda Walk Assist	655
Figure 5-21	657
Honda Motors Prototype Stride Management Motorized Assist Device	657
Table 5-22	659
Instead Technologies Research:	659
Table 5-23	660
Instead Technologies Consultancy Services:	660
Table 3-24	668
iRobot / InTouch Health RP-VITA	668
Figure 3-25	669
iRobot / InTouch Health RP-VITA	669
Table 5-26	671
Karman DME Internet Authorized Dealers	671
Figure 5-27	675
Mobility Research LiteGait Device	675
Figure 5-28	693
Reha G-EO Robotic Rehabilitation Device	693
Table 5-29	695
Reha Technology G-EO System	695
Table 5-30	701
RUR Key Market Areas For Robotic Technologies	701
Figure 3-31	702
Secom Co.Ltd MySpoon Manual Mode	702
Table 3-32	703

Secom Co.Ltd MySpoon Features in Manual Mode	703
Figure 3-33	704
Secom Co.Ltd MySpoon Semi-automatic Mode	704
	704
Table 3- 34	705
Secom Co.Ltd MySpoon Semi-automatic Mode	705
Figure 3-35	706
Secom Co.Ltd MySpoon Automatic Mode	706
Table 3-36	707
Secom Co.Ltd MySpoon Automatic Mode	707
Table 5-37	708
Sunrise Medical Products	708
Figure 3-38	710
Sunrise Medical Whitmyer Biomechanics Head Support	710
Table 3-39	711
Sunrise Medical Whitmyer Biomechanics Headrest Features	711
Figure 5-40	713
Touch Bionics Prosthetic Technologies	713
Figure 5-41	714

Tyromotion GmbH Employee Group	714
Table 5-42	716
Tyromotion GmbH Pablo®Plus System Strengthens The Upper Extremity Hand, Arm And Wrist Functions	716
Table 5-43	717
Tyromotion Network	717

