



智能康复设备在中西医结合场景的应用

Application of intelligent rehabilitation device in the scene of Integrated TCM & Western Medicine



创 造 健 康 · 人 人 共 享
TO SHARE THE JOY OF HEALTH WITH ALL

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A

Ageing population

人口老龄化：迅速增加的老龄人口导致医疗需求迅速增加

Rapidly growing elderly population leads to a **rapid increase in medical demand**

B

Big labor shortage

医护人员：世卫预测2035年医护人员缺口一千两百万

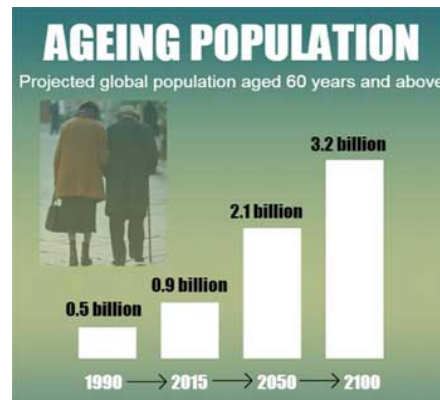
Medical staff: WHO predicts a **gap of 12 million** in health care workers in 2035

C

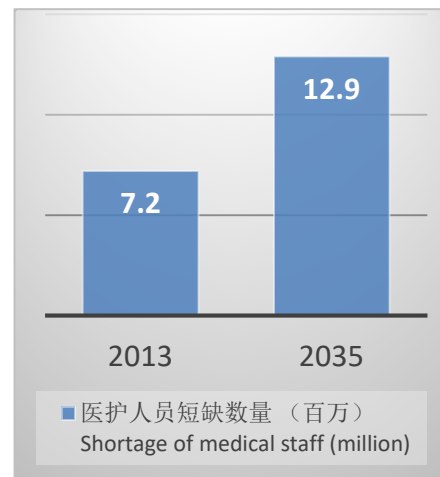
Challenge

需求 > 供给 如何保证急危重病资源充足，同时加强康复、疼痛管理及慢病管理？

Demand > Supply How to ensure adequate resources for high-risk diseases and strengthen rehabilitation, pain and chronic disease management



World Population Prospects: the 2017 Revision,



World Health Organization Global health workforce shortage to reach 12.9 million in coming decades

医用机器人分类

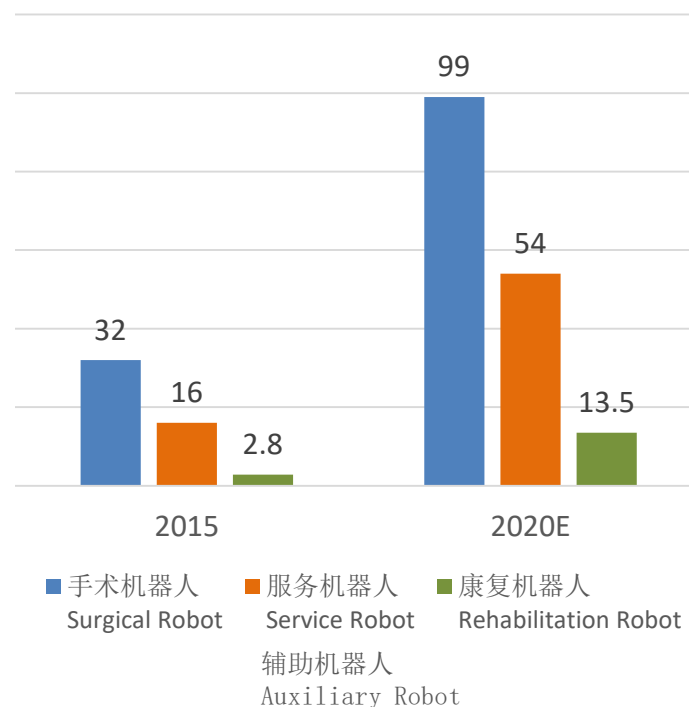
根据国际机器人联合会（IFR）分类，医用机器人可以分为手术机器人、康复机器人、辅助机器人、服务机器人四大类。

Medical robot classification

According to the International Federation of Robotics (IFR) classification, medical robots can be divided into four categories: surgical robots, rehabilitation robots, auxiliary robots, and service robots.

▼不同分支市场规模(亿美元)

Different branch market size (100 million US dollars)



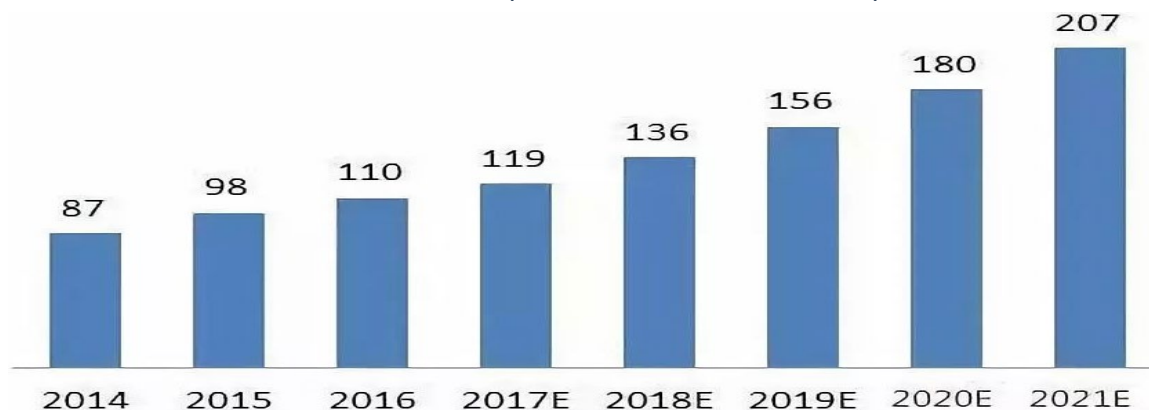
全球市场规模 Global Market Size

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▼2010-2017年国际医疗机器人销售情况 (单位: 台, 亿美元)
International medical robot sales in 2010-2017 (unit: Quantity, US\$100 million)



▼医用机器人全球行业市场规模 (单位: 亿美元)
Global market size of medical robot (unit: 100 million US dollars)



手术机器人:

代表--达芬奇手术机器人。Medical Micoinstruments、博恩思、Vicarious Surgical, Auris等多家获得过亿融资。

Surgical Robot:

Represents--Da Vinci surgical robot. Medical Micoinstruments, Bourne, Vicarious Surgical, Auris, etc.

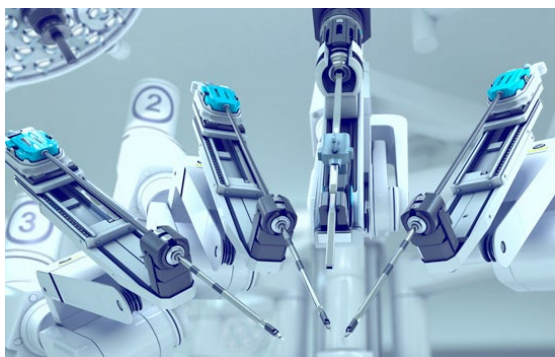


康复机器人:

外骨骼机器人、按摩机器人等。

Rehabilitation robot:

exoskeleton robot, massage robot, etc.



辅助机器人和服务机器人:

例如，配药机器人、诊断机器人、胶囊机器人、运输机器人等。

Auxiliary robots and service robots:

dispensing robots, diagnostic robots, capsule robots, transport robots, etc.



康复机器人帮助医生从繁重的康复任务中解放出来，**减少体力消耗**和负担，**提升工作效率**。康复机器人作为康复科室的重要用设备，能增强其综合竞争力，有效缓解医护人员不足的情况，并提升医疗水平，同时大幅**降低病患的康复成本**。

Rehabilitation robots help doctors free themselves from heavy rehabilitation works, **reducing physical exertion** and burden, **improving work efficiency** in the same time. As an important medical equipment in rehabilitation department, the rehabilitation robot has strengthened its infrastructure competition, eased the shortage of medical staff, and improved medical level while greatly **reducing rehabilitation cost of patients**.

▼ 各领域医疗机器人代表性企业

Representative companies of medical robots in various fields

类别 Category	国家 Country	企业名称 Company Name
手术机器人 Surgical robot	美国 US	Intuitive Surgical
		Verb Surgical
		Medtronic
		Medrobotics
		Auris Surgical Robotics & Hansen Medical
制药机器人 Pharmaceutical robot	美国 US	Aethon
	德国 Germany	Innovation Associates
外骨骼机器人 Exoskeleton robot	美国 US	Omnicell & Aesynt
	美国 US	Ekso Bionics
	德国 Germany	Barrett Medical
	英国 UK	RewalkRobotics
	日本 Japan	Rex Bionics Limited & 美安医药
医院消毒机器人 Hospital disinfection robot	瑞士 Switzerland	Cyberdyne
	美国 US	Hocomo & 蝶和科技DIH Tech
远程医疗机器人 Telemedicine robot	美国 US	Xenex
	美国 US	Intouch Health
陪伴机器人 Accompanying robot	美国 US	VGo Communications & Vecna Technologies
	日本 Japan	Luvozo PBC
		Honda Robotics

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EMMA按摩机器人 Massage Robot

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AiTreat是一家获得新加坡政府科研基金支持，由新加坡南洋理工大学孵化的人工智能机器人初创公司。AiTreat开发的EMMA人工智能机器人，可自动完成**中西医专业推拿按摩理疗工作**，被中央电视台、法新社、路透社、华尔街日报广泛报道。



AiTreat is an AI robot startup company supported by the Singapore Government Research Fund and incubated by Singapore Nanyang Technological University. The EMMA AI robot system developed by AiTreat is able to automatically complete **professional Chinese Tuina and therapy massage of western medicine**, which widely reported by CCTV, AFP, Reuters and Wall Street Journal.



EMMA按摩机器人 Massage Robot

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天士力 TASLY

应用场景 Application scenario

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保健按摩

中外各国均有各种形态的保健按摩，以养生保健及放松为目的，如：瑞士按摩、泰式按摩、日式指压等。

Wellness massage

Chinese and foreign countries have various forms of wellness massage for purpose of health care and relaxation, such as Swiss massage, Thai massage, Japanese finger pressure and so on.



肘平推法

中医学:推拿疗法

推拿不仅治疗骨伤、疼痛、慢性劳损疾病，对内、妇、儿等科也有较好的疗效。中医推拿手法与物理治疗手法治疗有同有异，但殊路同归，都是对人体软组织提供足够而适度的物理作用，起到加速机体恢复的目的。

Traditional Chinese Medicine: Tuina Therapy

Tuina not only treats bone injuries, pain and chronic strain diseases, but also has good effects on internal medicine, gynecology and pediatrics. The TCM Tuina techniques is different with physical therapy manual treatment, but the principle is same, which provides sufficient and moderate physical effects on human soft tissue to accelerate recovery of body.

Wellness
Massage
保健按摩

Physiotherapy
& Rehabilitation
物理治疗&康复
手法治疗

TCM Tuina
中医推拿

现代医学:物理治疗

- ☐ 运动治疗
- ☐ 物理因子治疗
- ☒ 手法治疗

Modern medicine: physical therapy

- ☐ Exercise therapy
- ☐ Physical factor therapy
- ☒ Manual Therapy





EMMA人工智能机器人在物理治疗领域架起一座**中西医结合的桥梁**，并基于中医和西医理论执行按摩理疗。

EMMA AI massage robot can **bridge the TCM and western medicine** from perspective of physical treatment and perform massage treatment with TCM and modern medical principles.

“Massage Therapy Attenuates Inflammatory Signaling After Exercise-Induced Muscle Damage —Science”



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天士力 TASLY

M-H

多方合作

SUPPORTIVE PARTNERSHIPS



揭牌仪式 Unveiling Ceremony (Hannover, 8th June 2018)



出席单位:

国家中医药管理局
德中医学会
汉诺威医科大学
天士力控股集团
中国中医科学院
中国驻德国大使馆
德国医师工会前主席
德国针灸认证主席

Attendees:

-State Administration of TCM of PRC
-DCGM
-MHH
-Tasly Holding Group
-CACMS
-Embassy of PRC in German
-Former Chairman of German Medical Association
-Chairman of German acupuncture certification





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中医推拿

疏通经络，行气活血；理筋整复，滑利关节；调整脏腑功能，增强抗病能力。

TCM Tuina

Dredge meridians, activating Qi and blood; rectify tendons, smooth joints; adjust function of organs, enhance disease resistance.



物理治疗手法治疗

增加活动范围，改善肌肉功能与动作，减少疼痛，改进组织活动性，减少软组织肿胀、炎症以及活动受限，放松。

Physical therapy manual treatment

Increase range of activity, improve muscle function and movement, reduce pain, improve tissue mobility, reduce soft tissue swelling, inflammation and limited mobility, and relax.



中西医结合手法对人体的作用

中西医手法比较接近，理论基础却截然不同，但作用在人体都是物理接触式刺激。很多临床研究证明，按摩可以在分子层面改善人体机能，从而起到医疗作用。

The effect of Integrated TCM and western medicine on human body

The TCM and western medicine techniques are relatively close, both are physical contact stimulation effect on human body, but the theoretical basis is completely different. There are many clinical studies have proven that massage can improve body function at molecular level and thus achieve medical effects.

期待与您合作！
Thank you!