

# Telehealth Occupational Therapy

EVERYTHING YOU NEED TO KNOW



# Telerehabilitation ( TR )

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**استفاده از تکنولوژی های ارتباطی دوطرفه برای ارائه خدمات مشاوره ای . پیشگیری  
تشخیصی و درمانی توانبخشی از راه دور**

# Where is OT with telerehabilitation?

➤ اولین بار در سال 1998

➤ 55.4 % کاردرمانگران خدمات خود را بصورت **face to face** ارائه می دهند ( AOTA 2010 )



صرف هزینه ، وقت ، انرژی

عدم دسترسی به خدمات در مناطقی که کمبود نیروی متخصص دارند



Corona virus

# Advantages of TR in OT

➤ بهبود دسترسی به خدمات کاربردی

➤ جلوگیری از تاخیر در دریافت خدمات

➤ کاهش تاثیر کمبود نیروی متخصص در برخی مناطق

➤ تلفیق assistive technology با تکنیک های تطابقی

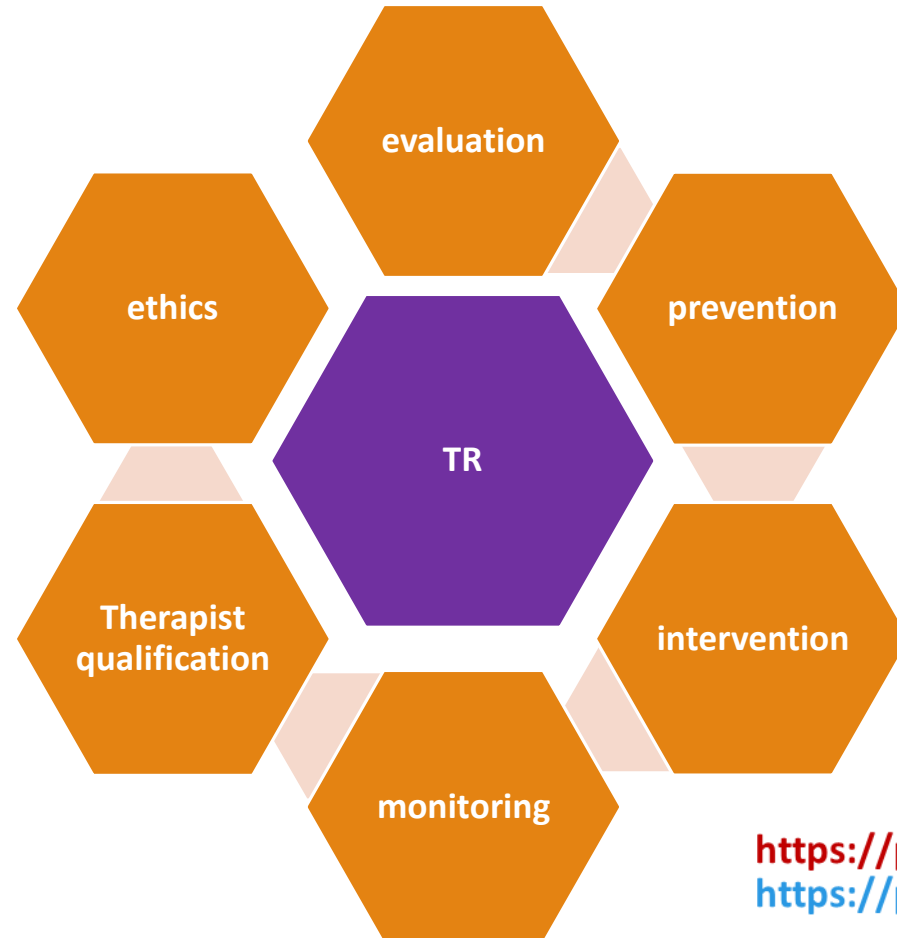
➤ ایجاد تطابق در محیط های واقعی خانه ، کار و مدرسه

➤ ایجاد عادات و روتین های ارتقا دهنده سلامت



# AOTA : Position Paper on TR

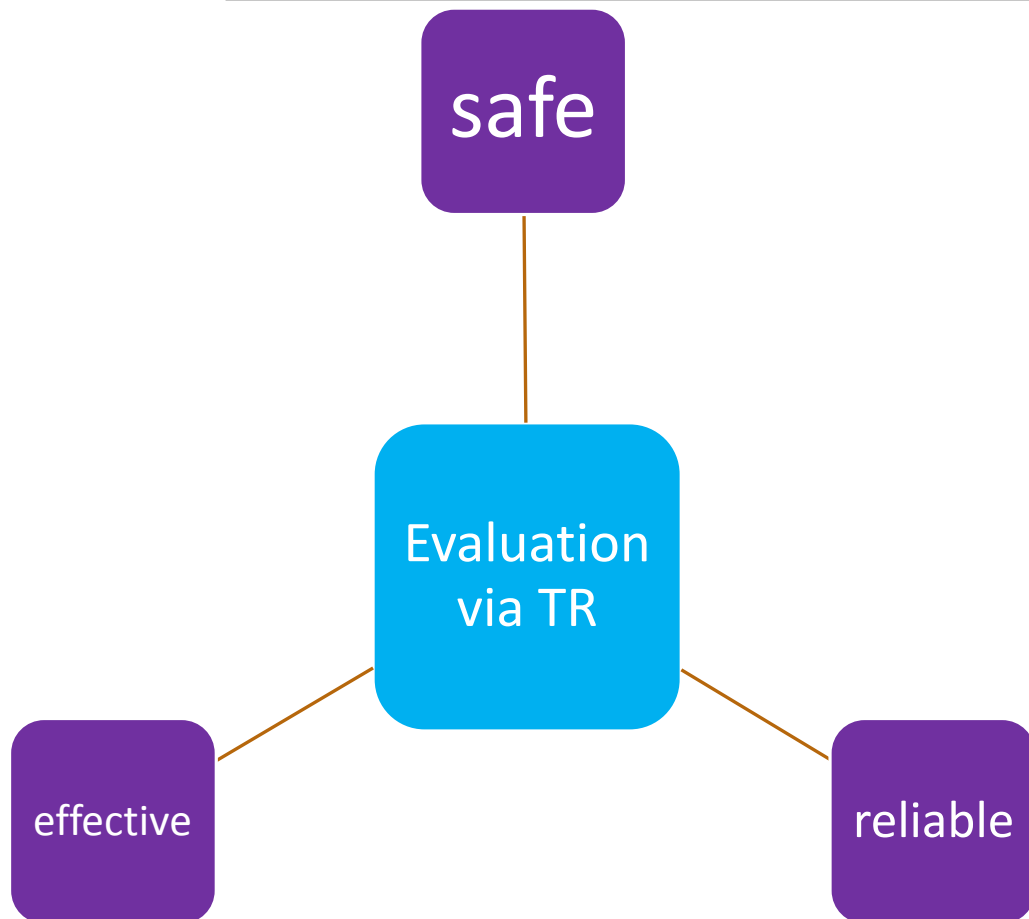
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<https://pubmed.ncbi.nlm.nih.gov/29238450/>  
<https://pubmed.ncbi.nlm.nih.gov/25945221/>

# Tele evaluation

برای برخی از بیماران امکان ارزیابی از طریق TR وجود ندارد



نکات مورد توجه در انتخاب ابزار ارزیابی از راه دور:

- تشخیص
- در دسترس بودن تکنولوژی مورد نظر برای مراجع
- انتخاب مراجع
- توانایی سنجش نتایج

# OT evaluation via TR

## برخی ابزارهای پایا برای ارزیابی

- FIM
- dynamometer
- FRTESS
- COPM
- KELS
- nine hole peg test
- ...

- مصاحبه
- ارزیابی های شناختی
- ارزیابی های محیطی
- ارزیابی تکنولوژی کمکی
- ارزیابی آمپوتاسیون اندام
- مدیریت زخم و استامپ
- مداخلات زودهنگام کودکان

# انواع تکنولوژی قابل استفاده در TR

## synchronous & non synchronous

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✓ برنامه ها و مدیای بر پایه اینترنت

✓ کامپیوتر

✓ ویدئو کنفرانس

✓ تلفن و گوشی هوشمند

✓ اپلیکیشن های انتقال داده

✓ ...



# انتخاب تکنولوژی مناسب



Clinical reasoning

- در دسترس بودن و توانایی حفظ تکنولوژی برای مراجع
- ایمنی و کارآمد بودن
- پایداری مراجع در استفاده
- کیفیت مداخلات ارائه شده
- نتایج حاصله برای مراجع
- برداشت مراجع از کیفیت زندگی
- بیمه و بازپرداخت

# Virtual reality



✓ ایجاد و کنترل یک محیط 3D جهت ارزیابی و مداخله

✓ افزایش ایمنی نسبت به محیط های واقعی در مراحل ابتدایی مداخله

✓ کاربرد در اختلالات شناختی ، اختلالات حرکتی ، کنترل و اصلاح برنامه درمانی منزل ، استفاده از powered wheelchair

✓ ارزیابی معماری محیط مراجع (Kim & Brienza, 2006)

✓ مشخص کردن تفاوت بین سطح مشارکت عملکردی مطلوب مراجع با آن چه در واقعیت وجود دارد برای خود مراجع

# telemonitoring

➤ مناسب برای مانیتور پیوستگی و پایبندی مراجع به برنامه توانبخشی در منزل و پیشرفت به سوی کسب نتایج عملکردی

➤ روشی مناسب برای follow up

- Self Monitoring Analysis & Reporting Technology ( SMART ):
  - ✓ Smart shoe
  - ✓ Haptic control
  - ✓ Personal data assistants ( PDAs )

# OT practitioner qualification & ethical consideration

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- درمانگر مسئول کسب مهارت های لازم در حوزه ای که می خواهد خدمات ارائه دهد :

## Entry – level education Vs continuing education

- آشنایی با نرم افزارها و سخت افزار و سایر اجزای تکنولوژی که از آن استفاده می کند
- دسترسی به پرسنل پشتیبانی جهت برطرف کردن مشکلات احتمالی حین استفاده از تکنولوژی
- کسب رضایت مراجع و دریافت مجوز برای دریافت ، ضبط و ارسال داده

**Table 1. Ethical Considerations and Strategies for Practice in Telerehabilitation**

| <b>ETHICAL CONSIDERATIONS</b>  | <b>STRATEGIES FOR ETHICAL PRACTICE</b>  |
|--|---|
| Fully inform the client regarding the implications of a telerehabilitation approach vs. a face-to-face occupational therapy approach.  | Use a written informed-consent procedure, with opportunity for the client to ask questions about the provision of the telerehabilitation services.  |
| Abide by laws and scope of practice related to licensure and provision of occupational therapy services using telerehabilitation.  | Before providing telerehabilitation services, become familiar with the laws that relate to the provision of services using communication or other technologies, such as communication requirements that prohibit recording conversation over telephone systems without the individual's permission.   |
| Adhere to professional standards.  | Study and apply occupational therapy standards of practice when using telerehabilitation to provide occupational therapy service. Take responsible steps (e.g., continuing education, research, supervision, and training), and use careful judgment to ensure one's own competence. Review existing literature to weigh the benefits and potential for client harm when considering using telerehabilitation to provide occupational therapy services. |
| Understand and abide by approaches that ensure confidentiality is not compromised as a result of using distance technologies.  | Become fully informed of technological security concerns with providing telerehabilitation, and utilize security approaches consistent with HIPAA for the transmission of all health-related information. Maintain the confidentiality of all verbal, written, electronic, augmentative, and nonverbal communications to conform to HIPAA standards.  |
| Understand and adhere to procedures if there is any compromise of security related to health information.  | Report any breach of security to an appropriate health privacy officer, or seek guidance of an independent legal counsel.   |
| Assess the effectiveness of telerehabilitation interventions within specific practice areas by consulting current research and conducting ongoing monitoring of client response.                               | Continually monitor the effectiveness of interventions, and consider alternative approaches, including traditional face-to-face approaches and/or referral to another provider, if the telerehabilitation services do not appear to be effective. Maintain knowledge of current research about effectiveness.   |
| Recognize the need to be culturally competent in the provision of services via telerehabilitation, including in language and ethnicity issues that could affect the quality and outcomes of services provided. | Understand the issues of cultural competence, and consider them when deciding if a telerehabilitation approach is appropriate for a particular client.  |

# Evidence and effectiveness???

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موثر بودن مداخلات از طریق TR بستگی به این دارد که:

✓ اهداف درمانی واضح و مشخص داشته باشیم

✓ ابزار و تکنولوژی مناسب انتخاب کنیم

✓ اطمینان از تعمیم نتایج به زندگی روزمره

<https://pubmed.ncbi.nlm.nih.gov/31217758/> ✓

<https://otpotential.com/blog/telehealth-occupational-therapy> ✓

# Case study...

| CASE DESCRIPTION  | TELEREHABILITATION USE  | OUTCOME  |
|---|---|--|
| <p><b>Lisa</b></p> <p>is a 70-year-old woman who has difficulty performing her daily occupations because of a stroke that left her with right-sided weakness. Although she had learned compensatory techniques for completing activities of daily living (ADLs), instrumental activities of daily living (IADLs), and work, she still wants to increase the use of her right hand, particularly for tasks related to managing her farm. Lisa learned of a program in a nearby community using new technology that might be beneficial for those with hemiparesis; however, the clinic is 2 hours from her home.</p> | <p>Lisa meets with her occupational therapist in clinic for initial evaluation. During the evaluation, Lisa learns additional strategies for incorporating the use of her right hand to perform her farm work. She is fitted for a functional electrical stimulation (FES) orthosis that she can use at home once it is programmed in the clinic. Twice each week, Lisa meets with her occupational therapist via computer, using a Web camera and online video software. Initially, the occupational therapist assesses Lisa as she performs work chores via virtual reality. As Lisa continues to make progress, the occupational therapist instructs her as to how to more effectively use her right hand for completion of ADLs and actual farm chores.</p> | <p>Lisa is able to make functional gains with using her right hand for everyday occupations. She reports that she is able to rely less on compensatory strategies and use her right hand more easily, especially while completing ADLs. Lisa achieved these outcomes with only 2 trips to the clinic and without therapist travel.</p> |

## José

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is a 25-year-old man with traumatic brain injury following a motor vehicle accident that occurred 1 year ago. He has participated in vocational rehabilitation and outpatient occupational therapy for the past 6 months. He continues to struggle with cognitive aspects of occupations that require initiation and short-term memory. These difficulties negatively affect his ability to complete his job as a school custodian and his ability to complete his ADLs and IADLs. The cognitive difficulties also negatively affect his social interactions. José recently moved into his own apartment. José greatly values his independence and living in his own place. His family checks on him frequently, but they are concerned about his safety due to a few recent incidents he encountered at home and work.

On the basis of an analysis of José's daily routines, the occupational therapist programs a smartphone to provide reminders to José to perform his daily occupations at home and work. The occupational therapist then teaches José's family how to remotely monitor his ADL and IADL performance, his safety within his home environment, his medication routine, and the temperature and security of his apartment.

The simple motion detectors in combination with a software program allow the family to determine whether or not José is maintaining his daily routine. Using a portable smartphone with automated messages; visual cues; and a secure, wireless Internet connection allows José to be successful in multiple environments and social settings. The assistive device of a smartphone does not "stick out," as many of friends also use their smartphone to help remind them of appointments.



## Angela

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is a 10-year-old girl with a complicated medical history that includes spina bifida. She is significantly limited in her ability to be mobile in the home and community. Although she utilizes a basic power wheelchair to drive around town and attend her family activities, it is in poor condition and too small for her. Angela cannot adequately reposition herself or properly perform a weight shift due to decreased upper-extremity strength and range of motion.

Angela has trouble traveling and sitting for long distances. She and her mother meet with an occupational therapy generalist face-to-face at a nearby clinic. Concurrently, an occupational therapist who has expertise in wheeled mobility participates in an occupational therapy session remotely using a secure videoconferencing system. The remote occupational therapist provides consultation to the local occupational therapist, Angela, and her mother about seating system frames, bases, and accessories; policy implications and funding mechanisms; and wheeled mobility and seating options.

After interviewing Angela and her mother and observing Angela navigate in her current chair, the remote occupational therapist recommends the appropriate power wheelchair and power seat functions. Upon approval from the insurance company, the remote occupational therapist uses the videoconferencing system to monitor the delivery, evaluate the fitting, and provide feedback and advice to Angela regarding utilization within the community and home. Angela has benefited from the provision of services without traveling a long distance. The local practitioner gained additional knowledge about wheeled mobility and seating options.

# *Additional resource*

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Canadian Occupational Therapy Association, <http://www.caot.ca/>

*International Journal of Telerehabilitation*, <http://ethnology.pitt.edu/ojs/index.php/Telerehab>

*Journal of Telemedicine and Telecare*, <http://jtt.rsmjournals.com/>

*Rehabilitation Engineering Research Center for Telerehabilitation*, <http://www.rerctr.pitt.edu>

*Telemedicine and e-Health*, [www.liebertpub.com/TMJ](http://www.liebertpub.com/TMJ)

<https://www.mdpi.com/2076-3417/7/10/986/pdf>

<https://otpotential.com/blog/telehealth-occupational-therapy>

با سفر از توجه شما