ORTHODOXY AND ORTHOPRAXY: HOW TO BRIDGE THE GAP IN CARDIAC REHABILITATION?

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CONSULTANT CARDIOLOGIST
DEPARTMENT OF CARDIOLOGY, KHOO TECK PUAT HOSPITAL, SINGAPORE
DEFINITION

- ORTHODOXY
  - THE GENERALLY ACCEPTED THEORY.
- ORTHOPRAXY
  - THE CORRECT PRACTICE.
## Perceived Importance of Exercise For Personal Health
(by Gender and Age)

Base: Total respondents

<table>
<thead>
<tr>
<th>Perception</th>
<th>Total 1,000</th>
<th>Gender</th>
<th>Gender</th>
<th>Age 50-59</th>
<th>Age 60-69</th>
<th>Age 70-79</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Exercise is the best thing I can do for my health</td>
<td>63</td>
<td>66</td>
<td>61</td>
<td>60</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Exercise is important for my health, but many other</td>
<td>32</td>
<td>30</td>
<td>33</td>
<td>34</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>things are more important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise is not very important for my health</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Don’t know/refused</td>
<td>1</td>
<td>*</td>
<td>1</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Exercise Attitudes and Behaviors: A Survey of Midlife and Older Adults. AARP. May 2002
### Perceived Exercise Frequency Needed to Maintain Health  
(by Gender and Age)

<table>
<thead>
<tr>
<th></th>
<th>Total (1,000)</th>
<th>Gender</th>
<th>Age</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
<td>50-59</td>
<td>60-69</td>
<td>70-79</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Not at all</td>
<td>1</td>
<td>*</td>
<td>1</td>
<td>*</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Less often than once a month</td>
<td>*</td>
<td>*</td>
<td>--</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About once a week</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>About three times a week</td>
<td>53</td>
<td>50</td>
<td>56</td>
<td>62</td>
<td>54</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Five or more times a week</td>
<td>36</td>
<td>40</td>
<td>32</td>
<td>29</td>
<td>36</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Don’t know/refused</td>
<td>1</td>
<td>*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

Base: Total respondents

Source: Second wave Exercise Attitudes and Behaviors: A Survey of Midlife and Older Adults. American Association of Retired Persons. May 2002
# Frequency Have Exercised Throughout Life
(by Gender and Age)

<table>
<thead>
<tr>
<th>Base: Total respondents</th>
<th>Gender</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (1,000)</td>
<td>Men (375)</td>
</tr>
<tr>
<td>I’ve always exercised regularly throughout my life</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>I’ve exercised fairly regularly much of the time</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>I’ve exercised occasionally</td>
<td>38</td>
<td>36</td>
</tr>
<tr>
<td>I’ve never exercised regularly</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

Exercise Attitudes and Behaviors: A Survey of Midlife and Older Adults. American Association of Retired Persons. May 2002
ORTHODOXY AND ORTHOPRAXY

- INCREASED KNOWLEDGE ABOUT EXERCISE DOES NOT LEAD TO ENHANCED EXERCISE PARTICIPATION.

ORTHODOXY AND ORTHOPRAXY

- KNOWLEDGE OF, AND BELIEF IN, THE HEALTH BENEFITS OF PHYSICAL ACTIVITY MAY MOTIVATE INITIAL INVOLVEMENT

- BUT THE FEELINGS OF ENJOYMENT AND WELL-BEING SEEMED TO BE STRONGER MOTIVES FOR CONTINUED PARTICIPATION IN HEALTH PROGRAMS.

• CARDIORESPIRATORY EXERCISE
  • ADULTS SHOULD GET AT LEAST 150 MINUTES OF MODERATE–INTENSITY EXERCISE PER WEEK.
  • EXERCISE RECOMMENDATIONS CAN BE MET THROUGH 30–60 MINUTES OF MODERATE–INTENSITY EXERCISE (FIVE DAYS PER WEEK) OR 20–60 MINUTES OF VIGOROUS–INTENSITY EXERCISE (THREE DAYS PER WEEK).
  • ONE CONTINUOUS SESSION AND MULTIPLE SHORTER SESSIONS (OF AT LEAST 10 MINUTES) ARE BOTH ACCEPTABLE TO ACCUMULATE DESIRED AMOUNT OF DAILY EXERCISE.
  • GRADUAL PROGRESSION OF EXERCISE TIME, FREQUENCY AND INTENSITY IS RECOMMENDED FOR BEST ADHERENCE AND LEAST INJURY RISK.
  • PEOPLE UNABLE TO MEET THESE MINIMUMS CAN STILL BENEFIT FROM SOME ACTIVITY.
BARRIERS TO BECOME PHYSICALLY ACTIVE
10 MOST COMMON REASONS NOT MORE PHYSICALLY ACTIVE

- Do not have enough time to exercise
- Find it inconvenient to exercise
- Lack self-motivation
- Do not find exercise enjoyable
- Find exercise boring
- Lack confidence in their ability to be physically active (Low self-efficacy)
10 MOST COMMON REASONS NOT MORE PHYSICALLY ACTIVE

• FEAR BEING INJURED OR HAVE BEEN INJURED RECENTLY

• LACK SELF-MANAGEMENT SKILLS, SUCH AS THE ABILITY TO SET PERSONAL GOALS, MONITOR PROGRESS, OR REWARD PROGRESS TOWARD SUCH GOALS

• LACK ENCOURAGEMENT, SUPPORT, OR COMPANIONSHIP FROM FAMILY AND FRIENDS, AND

• DO NOT HAVE PARKS, SIDEWALKS, BICYCLE TRAILS, OR SAFE AND PLEASANT WALKING PATHS CONVENIENT TO THEIR HOMES OR OFFICES.


**Barriers to Being Active Quiz**

*What keeps you from being more active?*

**Directions:** Listed below are reasons that people give to describe why they do not get as much physical activity as they think they should. Please read each statement and indicate how likely you are to say each of the following statements:

<table>
<thead>
<tr>
<th>How likely are you to say?</th>
<th>Very likely</th>
<th>Somewhat likely</th>
<th>Somewhat unlikely</th>
<th>Very unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My day is so busy now, I just don’t think I can make the time to include physical activity in my regular schedule.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. None of my family members or friends like to do anything active, so I don’t have a chance to exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. I’m just too tired after work to get any exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. I’ve been thinking about getting more exercise, but I just can’t seem to get started</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. I’m getting older so exercise can be risky.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. I don’t get enough exercise because I have never learned the skills for any sport.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. I don’t have access to jogging trails, swimming pools, bike paths, etc.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8. Physical activity takes too much time away from other commitments—time, work, family, etc.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. I’m embarrassed about how I will look when I exercise with others.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10. I don’t get enough sleep as it is. I just couldn’t get up early or stay up late to get some exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11. It’s easier for me to find excuses not to exercise than to go out to do something.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12. I know of too many people who have hurt themselves by overdoing it with exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13. I really can’t see learning a new sport at my age.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>14. It’s just too expensive. You have to take a class or join a club or buy the right equipment.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>15. My free times during the day are too short to include exercise.</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>16. My usual social activities with family or friends to not include</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Follow these instructions to score yourself:

- Enter the circled number in the spaces provided, putting together the number for statement 1 on line 1, statement 2 on line 2, and so on.
- Add the three scores on each line. Your barriers to physical activity fall into one or more of seven categories: lack of time, social influences, lack of energy, lack of willpower, fear of injury, lack of skill, and lack of resources. A score of 5 or above in any category shows that this is an important barrier for you to overcome.

\[
\begin{align*}
1 & \quad 8 + 12 + 16 = \text{Lack of time}^2 \\
2 & \quad 9 + 10 + 17 = \text{Social influence} \\
3 & \quad 11 + 12 + 19 = \text{Lack of energy} \\
4 & \quad 13 + 14 + 20 = \text{Lack of willpower} \\
5 & \quad 15 + 13 + 21 = \text{Fear of injury} \\
6 & \quad 16 + 17 + 19 = \text{Lack of skill} \\
7 & \quad 18 + 20 + 21 = \text{Lack of resources}
\end{align*}
\]
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• PROMOTING PHYSICAL ACTIVITY: A GUIDE FOR COMMUNITY ACTION (USDHHS, 1999).
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• LACK OF TIME
  • IDENTIFY AVAILABLE TIME SLOTS. MONITOR YOUR DAILY ACTIVITIES FOR ONE WEEK. IDENTIFY AT LEAST THREE 30-MINUTE TIME SLOTS YOU COULD USE FOR PHYSICAL ACTIVITY.
  • ADD PHYSICAL ACTIVITY TO YOUR DAILY ROUTINE. FOR EXAMPLE, WALK OR RIDE YOUR BIKE TO WORK OR SHOPPING, ORGANIZE SCHOOL ACTIVITIES AROUND PHYSICAL ACTIVITY, WALK THE DOG, EXERCISE WHILE YOU WATCH TV, PARK FARTHER AWAY FROM YOUR DESTINATION, ETC.
  • SELECT ACTIVITIES REQUIRING MINIMAL TIME, SUCH AS WALKING, JOGGING, OR STAIR-CLIMBING.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• SOCIAL INFLUENCE
  • EXPLAIN YOUR INTEREST IN PHYSICAL ACTIVITY TO FRIENDS AND FAMILY. ASK THEM TO SUPPORT YOUR EFFORTS.
  • INVITE FRIENDS AND FAMILY MEMBERS TO EXERCISE WITH YOU. PLAN SOCIAL ACTIVITIES INVOLVING EXERCISE.
  • DEVELOP NEW FRIENDSHIPS WITH PHYSICALLY ACTIVE PEOPLE. JOIN A GROUP, SUCH AS THE RUNNING OR A HIKING CLUBS.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• LACK OF ENERGY
  • SCHEDULE PHYSICAL ACTIVITY FOR TIMES IN THE DAY OR WEEK WHEN YOU FEEL ENERGETIC.
  • CONVINCE YOURSELF THAT IF YOU GIVE IT A CHANCE, PHYSICAL ACTIVITY WILL INCREASE YOUR ENERGY LEVEL; THEN, TRY IT.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• LACK OF MOTIVATION
  • PLAN AHEAD. MAKE PHYSICAL ACTIVITY A REGULAR PART OF YOUR DAILY OR WEEKLY SCHEDULE AND WRITE IT ON YOUR CALENDAR.
  • INVITE A FRIEND TO EXERCISE WITH YOU ON A REGULAR BASIS AND WRITE IT ON BOTH YOUR CALENDARS.
  • JOIN AN EXERCISE GROUP OR CLASS.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• FEAR OF INJURY
  • LEARN HOW TO WARM UP AND COOL DOWN TO PREVENT INJURY.
  • LEARN HOW TO EXERCISE APPROPRIATELY CONSIDERING YOUR AGE, FITNESS LEVEL, SKILL LEVEL, AND HEALTH STATUS.
  • CHOOSE ACTIVITIES INVOLVING MINIMUM RISK.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• LACK OF SKILL
  • SELECT ACTIVITIES REQUIRING NO NEW SKILLS, SUCH AS WALKING, CLIMBING STAIRS, OR JOGGING.
  • TAKE A CLASS TO DEVELOP NEW SKILLS.
SUGGESTIONS FOR OVERCOMING PHYSICAL ACTIVITY BARRIERS

• LACK OF RESOURCES
  • SELECT ACTIVITIES THAT REQUIRE MINIMAL FACILITIES OR EQUIPMENT, SUCH AS WALKING, JOGGING, JUMPING ROPE, OR CALISTHENICS.
  • IDENTIFY INEXPENSIVE, CONVENIENT RESOURCES AVAILABLE IN YOUR COMMUNITY (COMMUNITY EDUCATION PROGRAMS, PARK AND RECREATION PROGRAMS, WORKSITE PROGRAMS, ETC.).
FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT
FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT

• AFRICAN AMERICAN PATIENTS WITH CVD WERE LESS LIKELY TO PARTICIPATE IN AND COMPLETE CARDIAC REHABILITATION DUE TO FACTORS RELATED TO LOW SOCIOECONOMIC STATUS (E.G. LACK OF INSURANCE, WORK CONFLICTS, LOWER LEVEL OF EDUCATION) THAN NON-HISPANIC WHITE PATIENTS.

FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT

• THE CHARACTERISTICS ASSOCIATED WITH A LOWER RATE OF ENROLLMENT IN THE PROGRAM WERE
  • AGE
  • LIVING ALONE
  • LIVING FURTHER THAN 50 KM FROM THE CARDIAC REHABILITATION UNIT
  • IN WOMEN HAVING A HISTORY OF CARDIOVASCULAR DISEASE (RECURRENT MYOCARDIAL INFARCTION).

FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT

- Patients' participation was most strongly influenced by
  - Perceptions of the nature of the programs, and suitability of the programs
  - Scheduling of programs
  - Social comparisons made possible by program
  - The degree to which programs, providers, and program users met expectations.

FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT

• THE MAIN PERSONAL FACTORS AFFECTING ATTENDANCE AFTER REFERRAL INCLUDED
  • PATIENTS' KNOWLEDGE OF SERVICES
  • PATIENT IDENTITY
  • PERCEPTIONS OF HEART DISEASE
  • FINANCIAL CONSTRAINTS
  • OCCUPATIONAL CONSTRAINTS.

FACTORS AFFECTING CARDIAC REHABILITATION RECRUITMENT

• PATIENTS WITH MORE FREQUENT FOLLOW UP IN THE 6-MONTH PERIOD HAD SIGNIFICANTLY HIGHER RATES OF PARTICIPATION IN CARDIAC REHABILITATION, RECEIPT OF DIETARY ADVICE AND PRESCRIPTION OF CARDIO-PROTECTIVE MEDICATIONS.

• HYUN K, ET AL. IMPACT OF MEDICAL CONSULTATION FREQUENCY ON RISK FACTORS AND MEDICATIONS 6 MONTHS AFTER ACUTE CORONARY SYNDROME. PUBLIC HEALTH RES PRACT. 2016 JAN 28;26(1):E2611606. DOI: 10.17061/PHRP2611606.
SINGAPORE LOCAL SITUATION
## PRINCIPAL CAUSES OF DEATH

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total No. of Deaths</strong></td>
<td>18,481</td>
<td>18,938</td>
<td>19,393</td>
<td>19,862</td>
</tr>
<tr>
<td><strong>% of Total Deaths</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cancer</td>
<td>30.1</td>
<td>30.5</td>
<td>29.4</td>
<td>29.7</td>
</tr>
<tr>
<td>[ICD10: C00–C97]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pneumonia</td>
<td>16.8</td>
<td>18.5</td>
<td>19.0</td>
<td>19.4</td>
</tr>
<tr>
<td>[ICD10: J12–J18]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Ischaemic heart diseases</td>
<td>16.1</td>
<td>15.5</td>
<td>16.0</td>
<td>16.7</td>
</tr>
<tr>
<td>[ICD10: I20–I25]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Cerebrovascular diseases (including stroke)</td>
<td>9.3</td>
<td>8.9</td>
<td>8.4</td>
<td>6.8</td>
</tr>
<tr>
<td>[ICD10: I60–I69]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Ministry of Health, Singapore.  
REASONS OF REFUSAL

- Not keen: 71%
- Time constraint: 10%
- Financial constraint: 11%
- Distance: 8%
PHASE 2 CARDIAC REHABILITATION RECRUITMENT RATE
EARLY POST–DISCHARGE ASSESSMENT CLINIC POST ACUTE CORONARY SYNDROME

• RUN BY CARDIOLOGIST AND CARDIAC NURSES IN COLLABORATION WITH PHARMACISTS.

• PATIENTS WILL BE SEEN WITHIN 2 WEEKS AFTER DISCHARGE.

• THE AIM OF THIS CLINIC IS TO RE–OFFER AND EDUCATE PATIENTS ABOUT THE PHASE 2 CARDIAC REHABILITATION REGARDING ITS BENEFIT AND IMPORTANCE.
PHASE 2 CARDIAC REHABILITATION RECRUITMENT RATE
PHASE 2 CARDIAC REHABILITATION RECRUITMENT RATE

<table>
<thead>
<tr>
<th>Total</th>
<th>2013 %</th>
<th>2014 %</th>
<th>2015 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.5</td>
<td>14.2</td>
<td>27.5</td>
<td></td>
</tr>
</tbody>
</table>

\[ p < 0.01 \]
MONTHLY INCOME

• MEDIAN GROSS MONTHLY INCOME FROM WORK (EXCLUDING CENTRAL PROVIDENT FUND CONTRIBUTIONS) OF FULL-TIME EMPLOYED RESIDENTS
  • ~SG $ 2500
$p = 0.013$
$p < 0.01$
$p = 0.01$
$p = 0.018$
$p < 0.01$
$p < 0.01$

The graph shows the mean CAQ_admission for two groups: Low and High. The mean for the Low group is 19.62, and for the High group is 27.64. The error bars represent +/- 2 SE.
FUTURE TREND
FUTURE TREND

• MUSCLE ELECTRICAL STIMULATION IMPROVES NEUROVASCULAR CONTROL AND EXERCISE TOLERANCE IN HOSPITALISED ADVANCED HEART FAILURE PATIENTS
  • PATIENTS HOSPITALISED FOR TREATMENT OF DECOMPENSATED HEART FAILURE, CLASS IV NEW YORK HEART ASSOCIATION AND EJECTION FRACTION 30%
  • RAPHAELA V GROEHS. ET AL. EUROPEAN JOURNAL OF PREVENTIVE CARDIOLOGY 2016, VOL. 23(15) 1599–1608
FUTURE TREND

• MUSCLE ELECTRICAL STIMULATION IMPROVES NEUROVASCULAR CONTROL AND EXERCISE TOLERANCE IN HOSPITALISED ADVANCED HEART FAILURE PATIENTS
  • 2 GROUPS
    • FUNCTIONAL ELECTRICAL STIMULATION CONSISTED OF STIMULATING THE LOWER LIMBS AT 10 HZ FREQUENCY, 150 MS PULSE WIDTH AND 70 MA INTENSITY FOR 60 MINUTES/DAY FOR 8–10 CONSECUTIVE DAYS.
    • CONTROL GROUP UNDERWENT ELECTRICAL STIMULATION AT AN INTENSITY OF < 20 MA.
      • RAPHAELA V GROEHS. ET AL. EUROPEAN JOURNAL OF PREVENTIVE CARDIOLOGY 2016, VOL. 23(15) 1599–1608
Within-group comparison, $P < 0.05$;
† Between-group comparison, $P < 0.05$.

REMOTE ECG MONITORING

The sensor measures ECG and sends it to mobile phone

Monitoring

Mobile network

FUTURE TREND

• EXERGAMING TO INCREASE THE EXERCISE CAPACITY AND DAILY PHYSICAL ACTIVITY IN HEART FAILURE PATIENTS: A PILOT STUDY.
  • IN TOTAL, 32 HEART FAILURE PATIENTS WERE INCLUDED. MORE THAN HALF OF THE PATIENTS (53%) SIGNIFICANTLY INCREASED THEIR EXERCISE CAPACITY AFTER 12 WEEKS.
  • HAVING GRANDCHILDREN AND BEING MALE WERE RELATED TO MORE TIME SPENT EXERGAMING.
  • KLOMPSTRA L, ET AL. BMC GERIATR. 2014 NOV 18;14:119. DOI: 10.1186/1471-2318-14-119
WORKS WITH YOUR PHONE
VR Headset works with iPhone or Android

EASY TO USE
Pedaling input + lean slightly to steer

WIRELESS COMMUNICATION
via Bluetooth 4.0 (Smart / LE)

OUT OF BOX SIMPLICITY
Compact sensor easily clips to sock or shoe
PAPERDUDER

VR

JOHN BOLTON, MIKE LAMBERT, DENIS LISETTE, BEN UNSWORTH

GLOBAKORE INC.