

**CEC Article 4, 2011 - SAFETY FIRST – 3CEC's**  
By Beckie Jacobsmeyer

I hope as water fitness instructors your first and foremost goal is to teach a safe and effective class for all your participants. This is easier said than done at times. As in all fitness classes but most especially in water we get a wide range of fitness abilities from beginner to advance. We also have healthy individuals and individuals wanting to improve their health. How can we teach a safe class for all these individuals and at the same time challenge them so they all get an effective workout?

First of all how do we even know the health and physical limitations of our participants? Does our facility do a health history? Do they share it with us? Are do they take the attitude of the less we know the less we are liable for? Yes, some facilities do not want you to know; so, it is important for you to check with your manager before you start asking your class participant's to share their health history with you. Always remember that any information you get stays strictly between you and the participant. You can get into serious trouble by answering an innocent question from another participant and breaking confidentiality.

Even if your facility does not want you to know the participant's health history you can still teach a safe class by assuming that you have somebody in class who has a health issue such as high blood pressure, heart condition, knee, hip or back issues, is pregnant or has chronic diseases such as arthritis, MS or fibromyalgia. Actually it's pretty hard to find a class that doesn't have somebody with at least one of the above issues!

A good instructor learns to cue for these issues as part of teaching her class. An example of this would be those with back issues make sure you keep your leg close to the floor when doing moves extending to the back. Another cue is listening to your body; if you do a move that causes pain stop and substitute a jog until we transition to a new move. A good time to give these cues is during the warm up when you are reviewing your rehearsal moves. As you demonstrate a scissor mention those with hip replacements please do a jack unless your doctor has told you that you can cross the midline.

Below you will find the general guidelines for most of the health issues you will face as an instructor. Know also that these guidelines can change over time so stay current. It is advisable to improve your knowledge of these health issues by researching on line and attending workshops and programs run by reputable organizations. Remember when researching on line use accredited organizations like A.C.O.G. or A.C.S.M. There is a lot of misinformation out there so check the credentials of the entity reporting the information. Good organizations to further your education with are the Arthritis Foundation and MS Society who both have wonderful aquatic fitness programs. Even if you are not interested in becoming a personal trainer our Prep for P.T. Workshop is a good DVD to have. A book I have found helpful is the YMCA Water Fitness for Health by Mary Sanders. I believe you can buy it from their program school whether you work for the YMCA or not. The back half of the book lists almost every possible health issue with a list of what you should and should not do.

Let's start with general cues you should always use even for healthy participants:

**Roll through your foot or Always touch your heel down.**

Purpose: to avoid contracting the calf muscle continuously throughout the class

**Stand tall or Ears over shoulders, shoulders over hips, hips over knees**

Purpose: Standing in proper body alignment is the safest way to work out.

**Shoulders down, chest up, chin in**

Purpose: Keeps the neck and upper back relaxed.

**Take deep breaths throughout the workout or Breath in nose, out mouth**

Purpose: Prevent breath holding or shallow breathing. If the participant is panting they may be working at too high an intensity.

**No leaning during traveling**

Purpose: Leaning causes stress to the lower back.

**Stay in chest depth water**

Purpose: Best depth for traveling; a deeper participant has to lean to move; shallower participant has more impact and cannot use arms without leaning forward.

**Non-swimmers stay by wall**

Purpose: Can grab wall if lose balance and helps them feel more secure.

**Pain that lasts more than 2 weeks - see your doctor**

Purpose: We are not health care professionals. Pain lasting longer is an indication something could be seriously wrong and needs to be treated by a doctor. The following cues should be given to participants who have the following orthopedic issues:

Again the following are general guidelines for specific health issues. It is always advisable to get more complete and specific guidelines if you have participants with these issues in your class.

**Arthritis—Osteoarthritis**

Encourage participants to use shoes for traction and bring walking aids to pool exit  
Participants should descend with weaker leg and ascend with stronger leg  
Stay in pain free range of motion  
Move hurts; don't do...substitute (give option)  
Increase depth of water if impact is bothering you but don't travel  
Avoid jumping moves or take the bounce out  
Loose grip when using equipment  
Shake out hands when finished with equipment held in hands  
When working a joint it should be submerged in the water  
Instructors should never touch or manipulate a participant's limb or joint  
Arms can be raised overhead in a stationary position with shoulders in  
Relax muscles totally between contractions  
Breathing should be deep & rhythmic at all times  
2 hour pain rule: joint pain that lasts for two hours or more after exercising means you have over done it and need to cut back next time

### **Arthritis—Rheumatoid**

Listen to your body---if you have a flare up go slower, do less reps

### **Arthritis—Rheumatoid, Fibromyalgia, Lupus**

Listen to your body---Take rest breaks or leave early before feeling fatigued

### **Carpal Tunnel Syndrome or arthritis in hands or wrist:**

No equipment in hands

\*\*Use short noodle with slit, slide over wrist to protect it.

Slice or cup hands

\*\* When doing exercises for these areas encourage participant to cup hands to strengthen muscles, if have pain then slice to try to keep range of motion.

### **Muscle strain/Tendinitis Guidelines**

Stretch in pain free range of motion

Strengthen opposing muscle groups to restore muscle balance

### **Foot issues, sprained ankle, plantar facilitis, and shin splints**

No Impact

\*\* Work in deep water or use a noodle in shallow water to lessen impact.

Anchor down

\*\* Always keep one foot on the floor taking the bounce out. A jog becomes a march.

No rebounding ...work at level 2 and 3

\*\* Remember to cue move options for these levels if class is rebounding.

If it hurts don't do it!

Keep foot relaxed

\*\* Avoid cueing to point or flex foot while doing exercises; reminder those participants to keep foot relaxed.

### **Neck Strains or Arthritis in Neck Guidelines**

- Do not use buoyant equipment
- Use slice or cupped hands when doing upper body exercises
- No core exercises lying on back
- Do upright core work
- Encourage participant to keep shoulders down and relaxed
- Make sure to adequately stretch this area at end of class

### **Shoulder Injuries**

- Limited or no arm movement (last option)
- Slice with the hands when using arms to get range of movement
- Use short lever arm movements instead of long lever
- Slow the movement down
- Do minimal out of the water moves and assist lift with unaffected arm
- Have participant work in level two when using arms
- Encourage participants to stretch this area at end of class

Shoulder issues are a common complaint from participants in our class because they affect predominantly women between the ages of 45 and 65. These issues can be rotator cuff tears, shoulder impingement, or even frozen shoulders, as well as, arthritis in the shoulder joint. It is important to encourage your participants with these issues to work to the point of pain, not past it. They need to try to keep as much range of motion as possible so encourage them to try the move slicing through the water.

### **Arm Injuries**

- Limited or no arm movement (broken arm)
- Do leg work only (broken arm)
- The most common arm complaint is tennis elbow or tendinitis of the elbow.
- The following are guidelines for participants suffering from this.
- Keep the wrist in neutral
- Cue a loose grip on equipment and take frequent rest breaks
- Cue to use slicing hands if cupped or webbed hands cause pain
- Remember to stretch the wrist flexors & extensors

It seems like I never have a class without somebody telling me they have back problems. Sometimes they are returning from surgery and still in pain. Others are thinking about surgery and hoping the water will help so they won't have to have surgery. The guidelines below are applicable for almost all back issues and also to prevent back issues for your healthy participants.

### **Back Injuries**

- Keep the spine in neutral, especially when traveling
- When extending to the back, keep the leg low, toe on the floor
- Change positions or activities frequently

Unload the spine by moving into deeper water or working in level two shoulders in position  
No rebounding  
Make the range of movement smaller  
Do straight plane moves, and avoid diagonal or multi plane moves if causes pain  
No twisting (contraindicated)  
Be careful with anchored down moves requiring stabilization  
If a move hurts don't do it

\*\*Watch participant closely that they are doing the moves correctly. The tuck mogul is easy to do incorrectly and start twisting. Also watch for twisting when doing an anchored down lateral move pulling across the body.

How about those participants who have postural deviations such as lordosis (sway back) or kyphosis (hunchback)? Sometimes your participants have these issues due to bad posture and/or muscle imbalance. If this is the case their posture can be improved by focusing on the following guidelines.

### **Lordosis**

Focus on keeping a strong core throughout the workout. Abs pulled in.  
Add some abdominal and back extension exercises to routine  
Limit hip flexor work (staying in level 2 for long periods of time)  
Limit impact or rebounding  
Stretch the lower back and hip flexors at end of class

### **Kyphosis**

No buoyant equipment  
Limit chest and anterior (front) shoulder work  
Emphasize mid back and posterior (back) shoulder exercises  
Stretch the chest and upper back at end of class

We all have those participants whose doctor recommends for them to start exercising in the water before returning to land exercise after surgery. Here are some guidelines for participants returning to the water after any type of surgery.

### **General Post-Surgery Guidelines**

Wait 2 to 4 weeks after arthroscopy surgery.  
Wait 8 to 12 weeks after open surgery.

\*\* Wound should be completely healed before getting in water to avoid infection.  
Participant should have full range of motion and be free of pain before exercising  
\*\* We often get patients before they reach this level. Make sure that they have been released from physical therapy and the pain does not increase while exercising.

The participant has medical clearance specifically for aquatic exercise.  
\*\* This generally falls under the realm of a personal trainer who can require a prescription from the doctor with a list of contraindicated exercises or movements. The

best you can do is ask if their doctor has released them and specifically told them they can participate in an aquatic group exercise/aerobic program. If you notice that they are struggling to keep up or experiencing pain while exercising recommend that they get together with an aquatic personal trainer who has the knowledge to tell them how to modify what they are doing until they are ready for a regular water aerobics class. If your facility does not have an aquatic personal trainer on staff recommend that they try a lower intensity class such as an arthritis class or strengthen training class.

Tell participants to always follow physician's guidelines  
\*\*It is important for them to know the doctor's guidelines. If they did not get this information at their last doctor visit they need to call the doctor and ask for a list of these guidelines, especially anything that is contraindicated. If they are coming back from heart surgery they also need to know the cardio intensity level they should be working within (ex. 65 to 75% of their M.H.R.). Doctors often assume that all water exercise/aerobic classes are the same, especially if they have never participated in one. They need to understand that an aerobics class may encourage the participants to work within the 80 to 85% of their M.H.R. or in the case of an interval class work as high as 95% of their M.H.R. for short periods of time.

Encourage participant to start with slower, smaller range of motion when doing exercises or aerobic moves

It is always best to start out slowly when returning from surgery even if you were exercising before the surgery.

### **Hip Replacements**

Participant should **not** combine hip flexion, adduction and internal rotation, which would be a tuck jack  
Participant should **not** cross the midline of the body (ex. Scissors)

\*\*The participant should check with their surgeon to get their guidelines. Some participant's implants can do the above movements, some cannot.

Include exercises to strengthen hip extensors and abductors  
Stretch hip flexors and legs at end of class

### **Knee Replacement, Torn Meniscus, ACL, or PCL**

Participant may need to wear a brace in pool  
Avoid twisting or rotary leg movements at the knee  
Limit lateral movement until released from physical therapist  
Do mostly front and back moves  
Limit rebounding moves if causes pain  
**Never lock the knee joint**

Encourage participants to work in their available range of motion

\*\*Participants may not be able to reach their foot in the back in a move such as the back hopscotch or back heel touch. Tell them that is okay and not to try to force the move by twisting or putting the body out of alignment.

Incorporate moves that strengthen the quadriceps, hamstrings, adductors gluts and core muscles.

Include some daily activity moves such as squat to stands and balancing on one leg

Use static stretches at the end of class to regain range of motion if water temperature allows. Make sure to stretch both the quads and hamstrings.

Many of our participants are on medications for heart conditions, high blood pressure, lung issues or diabetes. These participants need to be watched more closely for signs of distress while exercising.

**Those signs of distress are:**

Faces are sweaty and/or turning red

Panting or shallow, fast inhalations

Glassy eyed

Suddenly uncoordinated

Don't seem to be understanding or following directions

These distress signs could signal a heart attack, stroke, or diabetic shock and should not be taken lightly or ignored. Encourage the participant to slow down but keep moving the legs in a slow march. This is so their heart rate does not drop too quickly which could cause them to faint. If they do not recover quickly follow the procedure for your facility on getting medical care (EMS) for them. Strongly advise them not to leave the class or the facility without being checked out. Make sure to make your manager aware of the situation before you or the participant leaves the building.

If participants are on medications such as an inhaler or they are diabetic advise them to bring the inhaler or a piece of candy to the pool deck so it is immediately available if needed. Blood sugar can drop quickly while exercising.

Participants with heart conditions, high blood pressure, diabetes or prenatal women should only work at aerobic capacity **not** anaerobic (above 85% of their M.H.R.)

The last participants we will discuss are our pregnant mommy's to be. This group is usually healthy but may be new to the water. They may not be aware of how hard they are working in the water because they are not hot and sweaty like they are on land. You need to encourage them to monitor how hard they are working by doing a talk test. If they can say a short 3 or 4 word sentence without having to take a breath they should still be working at an aerobic level. Encourage your prenatal women to start out slowly if they are new to the water and not to work to the point of exhaustion by the end of class. The following is the ACOG guidelines for a non-complicated pregnancy.

## **Prenatal**

Prenatal women who have never exercised should be encouraged to start slowly and begin after their first trimester.

Shoes should be recommended for traction and to cushion impact

30 minutes of moderate exercise daily, never to the point of fatigue or exhaustion

Previously physically active women may remain active working at a moderate level.

\*\* Moderate level is usually 70 to 75% of M.H.R. It is very easy to work above that in the water because we are not dealing with gravity and our bodies are more efficient at cooling themselves thus avoiding that hot, sweaty feeling. You may also be dealing with a woman who is use to pushing herself during a workout. This should be discouraged because when a pregnant woman works above 75% of her maximum heart rate she can no longer provide enough oxygen for both her physical needs and the fetus's. This could cause very painful full body muscle cramps, which is nature's way of forcefully slowing the pregnant woman down to protect the fetus. I personally had this happen during my third pregnancy. Every muscle locked in a contracted position and I could not move. It was very scary!

The other reason to work out at a moderate intensity is heat dissipation. As mentioned above water is a more efficient cooling medium then air and therefore we do not usually feel hot and sweaty while working out in it. We do need to remember that the water temperature is usually around 84 degrees and the air temperature is usually higher than that. We also need to take into consideration the humidity. Working out at a high intensity (over 75% M.H.R.) in these conditions will normally raise our body temperature a few degrees. A woman in her first trimester should avoid raising her body temperature higher than 90 degrees because this could lead to spinal bifida in the fetus. Below are other guidelines to help prevent this.

Stay hydrated drinking water before, during and after workout.

If outside class avoid mid-day workouts

Prenatal women on land are not allowed to work out lying on their backs because the blood flow to their lower body can be cut off by the weight of the fetus pressing down on the artery. This guideline should also be followed in the water even though the water is not a hard, solid object and probably would not apply enough force to cut the blood flow off.

There are three final guidelines to follow for a prenatal woman in your class.

No rebounding after first trimester

\*\*The drag of the water puts too much pressure on the stretching abdominal muscles and pelvic floor muscles.

No sitting on a noodle

\*\* A prenatal woman's lower spine starts to go into hyperextension as the pregnancy progresses. The buoyancy of the noodle will accentuate this problem and can cause lower back pain.

Equipment usage

Limit equipment to short time use (15 minutes maximum)

Maintain proper alignment when using equipment

Buoyant equipment held in hands such as barbells should not be allowed to bounce out of water.

Do not allow equipment to pass hip when pulling down (ex. X-country ski arms)

Do not allow equipment to pass the shoulder to the back (ex. Horizontal jumping jack arms)

No excessive force

\*\* Due to the secretion of a relaxin hormone during pregnancy a woman's joints are susceptible to injury. Caution should be used not to add excessive force while strength training and participant should be careful with the equipment for this reason.

It is our responsibility to provide a safe, effective class for each of our participants. If you start incorporating the guidelines and cues in this article you are well on your way to accomplishing that responsibility. As mentioned at the beginning of the article it is important to continue educating yourself about all of the health issues you may encounter while teaching. Remember to only use accredited sources when researching.

Yes, our class dynamics can be very complex but it can also challenge us to push ourselves that little extra to be the best instructor we can be. Your participants will appreciate you for taking the time to personalize the workout for their safety and benefit.

### **CEC ARTICLE QUESTIONS VOL 4, 2011 (3 CEC's)**

Member Option: Mail this test with a coupon and \$13.50 (**\$15 for non members without coupon**) to A-PAI, 547 WCR 18, Longmont, CO 80504

A passing score of 80% is required and a CEC certificate will be mailed back to you to count toward recertification.

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1. What is the first and foremost goal of fitness instructors?

2. T or F Even if your facility doesn't do health history forms you can ask your participants if they have any issues.
3. T or F If you don't know your patrons health limitations it is impossible to teach a safe class.
4. Name 2 organizations that are accredited and report current information?
5. Why should you roll through your foot or always touch your heel down?
6. Why should you not lean while travelling?
7. List 6 Cues for Osteoarthritis.
8. List 2 Cues for Rheumatoid Arthritis.
9. List 2 Tendinitis Guidelines.
10. For what conditions should you recommend no impact?
11. For what conditions should you recommend limited impact or rebound?

12. For which conditions should you not use buoyant equipment?
13. For which conditions should you not do CORE work lying on your back?
14. For which conditions should you recommend slice hands?
15. For which conditions should you recommend deeper water?
16. Give an example of an exercise that someone with a hip replacement should not do that includes hip flexion, adduction and internal rotation.
17. Give an example of an exercise that someone with a hip replacement should not do that includes crossing the midline of the body.
18. What conditions recommend mostly front and back movements?
19. List 5 signs of distress.
20. What could these distress signs signal?

21. For which conditions do you not exceed aerobic capacity?
22. Which conditions do you not exceed 70-75% of MHR?
23. Why for this group should you not exceed 70-75% of MHR?
24. What are the three final guidelines for prenatal participants?
25. What are the equipment usage recommendations for prenatal?
26. What hormone is responsible for joint concerns in prenatal?
27. Why shouldn't you rebound after the first trimester?
28. Why shouldn't prenatal women sit on a noodle?
29. What are the general post-surgery guidelines for resuming exercise?

30. What are the recommendations for Kyphosis?

31. What are the recommendations for Lordosis?