



Physician Update

Research shows benefits of exercise during pregnancy

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Central Maine Medical Center expands interventional radiology service

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Research shows benefits of exercise during pregnancy



by Elizabeth Rothe, M.D.

Exercise has been shown to be a key component to a healthy life. Pregnancy is no exception. Research has demonstrated that exercise is beneficial for healthy pregnant women.

As illustrated in Table 1, the benefits of exercise in pregnancy are multiple. The American College of Obstetricians and Gynecologists general guidelines from 2002 are: "In the absence of either medical or obstetric complications, 30 minutes or more of moderate exercise a day on most, if not all, days of the week is recommended for pregnant women."

Concerns about exercise in pregnancy have historically included teratogenicity with elevated maternal temperature in exercise, fetal distress with increased skeletal muscle oxygen demand, and substrate diversion with decreased glucose concentrations and subsequent low birth weight, as well as increased risk of preterm labor. There is no data to support exercise leading to teratogenicity. Moderate exercise (a range of 12-14 on a Rate of Perceived Exertion scale with 20 being the most intense) in healthy women is well-tolerated by the fetus. For the most part, studies have shown that low to moderate exercise does not significantly reduce birthweight. Vigorous exercise has shown more conflicting data, with more evidence of minor decreases in birthweight, but not leading to significant adverse fetal events. With regards to miscarriage, there is a potential increase in late first trimester with vigorous exercise (retrospective), but no increase after 18 weeks. Previously inactive women should be evaluated by their physician prior to initiating an exercise program.

Types of well-tolerated physical activity for pregnant women include walking, cycling, swimming, and low-impact aerobics. With regard to intensity, women can use the Rate of Perceived Exertion (Table 2) or the Talk Test - they should be able to hold a conversation while exercising. There are certain types of physical activity that pregnant women should avoid however. These include contact sports, such as hockey or soccer, and sports with an inherent fall risk, such as alpine skiing or horseback

Table 1
BENEFITS OF EXERCISE

Maternal:

- Decrease risk of gestational diabetes and improve GDM
- Reduce risk of pre-eclampsia/PIH
- Moderate weight gain
- Improve energy, strength, endurance, sleep
- Maintain fitness
- Lower cardiovascular risk profile
- Possibly shorten labor, decrease c-section rate and other obstetrical interventions
- Help with back pain
- Improved bladder control
- Psychological: well-being, control, self-image

Fetal:

- Less body fat for infants
- Decreased colic
- Improved neuro-developmental scores in language and motor areas

riding. High-altitude (over 6,000 feet) activities should be avoided to decrease risk of fetal hypoxia. Scuba diving, because of risk of fetal decompression sickness, and very heavy weight lifting, due to elevations in blood pressure, should also be avoided. Women should avoid supine positions after the first trimester and avoid prolonged, motionless standing to decrease risk of poor venous return. Relative and absolute contraindications to exercise in pregnancy are listed in Tables 3 and 4. Table 5 enumerates reasons for terminating exercise.

The PARmed-X for Pregnancy, published by the Canadian Society for Exercise Physiology, is a patient information guide, health-screening checklist, and exercise prescription form for pregnant women, and contains some sample exercises. This is free PDF for download, and is available at www.csep.ca/forms.asp

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Table 2

RATING OF PERCEIVED EXERTION (RPE)

Check the accuracy of your heart rate target zone by comparing it to the scale below. A range of about 12-14 (somewhat hard) is appropriate for most pregnant women.

6	
7	Very, very light
8	
9	Somewhat light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	

Source:
PARmed-X for
Pregnancy

Table 3
**ABSOLUTE CONTRAINDICATIONS
 TO EXERCISE IN PREGNANCY**

Hemodynamically significant heart disease
 Restrictive lung disease
 Incompetent cervix/cerclage
 Multiple gestation at risk for PTL
 Persistent 2nd-3rd trimester bleeding
 Placenta previa
 Preterm labor of current pregnancy
 Ruptured membranes
 Pre-eclampsia/PIH

Table 4
**RELATIVE CONTRAINDICATIONS
 TO EXERCISE IN PREGNANCY**

Severe anemia
 Unevaluated maternal arrhythmia
 Chronic bronchitis
 Uncontrolled DM type 1
 Extreme morbid obesity
 Extreme underweight (BMI < 12)
 History extremely sedentary lifestyle
 Current IUGR
 Poorly controlled HTN
 Orthopedic limitations
 Poorly controlled seizure disorder
 Poorly controlled hyperthyroidism
 Heavy smoker
 Previous miscarriage or PTL

Table 5

Preterm Labor
 Decreased fetal movement
 Leakage of fluid
 Vaginal bleeding
 Dizziness
 Headache
 Muscle weakness
 Dyspnea before exertion
 Chest pain
 Calf pain or swelling



**Terminate
 Exercise**



Central Maine Medical Center expands interventional radiology service



By Gregory Friedel, M.D., M.B.A.

Central Maine Medical Center has opened a state-of-the-art interventional radiology suite that allows more options for treatment.

The suite contains a new GE Innova 4100+ system that uses the latest in low dose fluoroscopy and subtraction angiography to provide clear, precise, high-resolution images. These enhanced images allow physicians to improve treatment options provided to patients.

Particularly exciting are new interventional oncology procedures, including chemoembolization for hepatic tumors as well as thermal tumor ablation. With chemoembolization, chemotherapy is directly delivered to liver tumors via a tiny catheter in the artery inserted via the groin. This system of administering therapeutic drugs minimizes systemic side effects. Thermal ablation uses needles inserted into a tumor mass to heat or cool the tissue thereby killing the cancer cells. This technique can also be used in the kidney and in some bone tumors.

CMMC has expanded its ability to care for dialysis patients by providing tunneled dialysis catheter placement and performing fistula angioplasty and declotting procedures. In these procedures, catheters are inserted into the patient's dialysis fistula and areas of narrowing are identified and treated with high-pressure balloon dilation. Clotted fistulas and grafts are treated using medication and mechanical means to restore flow under x-ray guidance.

Patients with significant back pain from post-traumatic, pathologic or osteoporotic compression fractures can be treated with vertebral augmentation utilizing the latest in vertebroplasty or kyphoplasty cement placement techniques.

Radiologists at CMMC continue to provide angioplasty and stenting services for treatment of claudication and lower extremity vascular disease, including the placement of inferior vena cava filters to protect against blood clots from the legs traveling to the lungs. In addition, radiologists at CMMC also treat lower extremity venous thrombosis with mechanical or drug mediated thrombolysis to help reduce the long-term sequelae of post-thrombotic syndrome, which can be devastating to patients.

CMMC's new interventional suite not only offers high technology that supports great care and expanded therapy for the patients, it is also well designed aesthetically to help patients relax and decrease anxiety during procedures.

Gregory Friedel, M.D., M.B.A., is an interventional radiologist who recently joined X-Ray Professional Associates, the radiology group physician practice that serves the Central Maine Medical Family, including Central Maine Medical Center. He can be reached at 207-795-2400.





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