

# Waves on pregnant women health and social care essay

[Sociology](#), [Women](#)



Waves have been applied to many of important processes presents. In this article I am traveling to look into the application of moving ridges on pregnant adult females. One of the really of important subjects is the application of echography in antenatal medical examination ; therefore I would concentrate on this subject and discourse its rule and advantages among other different methods of antenatal medical examination.

However moving ridges do non merely conveying benefits to pregnant adult females, but besides injury. There are some electromagnetic moving ridges ( or EM moving ridges ) which may be harmful to both the female parents and the foetuss, such as X ray. Yet, will pregnant adult females truly have an increased hazard of abortion after holding an X-ray? Recently there are besides concerns about the consequence of wireless moving ridges and microwaves on gestation. In this article I am traveling to look into them one by one.

### Obstetric Ultrasonography

Ultrasonography refers to the usage of ultrasound. Ultrasound is longitudinal moving ridge, it has the same velocity as hearable sound moving ridge in air, which is  $340\text{ms}^{-1}$ . The chief difference between hearable sound moving ridge and ultrasound is that ultrasound has a frequence beyond hearable scope of homo, which is around 20 Hertz ( 20 Hz ) to 20 kHzs ( 20 kilohertz or 20,000 Hz ) . Normally the frequence of ultrasound used in antenatal medical examination is ranged from 1.6 to 10 MHz ( MHz ) , depending on what constructions of the foetuss are being examined. Ultrasound with lower frequence can perforate deeper into organic structure tissues, because the

higher the frequency, the more supersonic moving ridges are being absorbed alternatively of reflected, therefore while analyzing deeper tissues like the liver and kidney, ultrasound with lower frequency ( around 1. 6-6MHz ) is used.

In the echography, ultrasound moving ridges are emitted by a device called transducer. Actually the term transducer refers to a device which converts one signifier of energy into another, so there are tonss of types of transducer. In the echography, an electroacoustic transducer is used to change over electricity to breathe and have ultrasound ; therefore to be more exact, the device used is besides called an ultrasound transceiver. The transducer is placed on the venters of the pregnant adult female, the ultrasound emitted penetrates the tegument and so reaches the fetus and other internal variety meats of the female parent. The moving ridges are so reflected back to the transceiver, the transceiver senses the moving ridges and converts them into images.

An ultrasound transceiver:

hypertext transfer protocol: [//l. b5z. net/i/u/6062479/i/transducer\\_tn. jpg](http://l. b5z. net/i/u/6062479/i/transducer_tn. jpg)

beginning: hypertext transfer protocol: [//www. chesapeakeultrasound. com/ultrasound\\_products](http://www. chesapeakeultrasound. com/ultrasound_products)

An echography:

hypertext transfer protocol: //gulfcoastmri. files. wordpress.

com/2010/06/sonogram-human-foetal-fetal-ultrasound-scan-at-22-weeks-mono-1-anon. jpg

Beginning: hypertext transfer protocol: //gulfcoastmri. wordpress.

com/2010/06/07/obstetric-ultrasonography/

In instance that the pregnant adult female is in early gestation or corpulent, she can undergo transvaginal echography, which a investigation is placed in the adult female 's vagina. Sometimes the trial is besides carried out if the pregnant adult female has got unnatural vaginal hemorrhage or pelvic hurting. This type of echography has the similar rule as the echography mentioned above. Some female parents may desire to see the pulse of their babes, they can transport out the Doppler echography. It has fundamentally the same rule as the echography except the ultrasound is farther enhanced by Doppler Effect. Generally the foetus 's pulse can be detected after 7 hebdomads of gestation, therefore the blood flow of the foetus can be detected every bit good. The blood flows in a circulation in the organic structure of the foetus, the Doppler echography can therefore observe the alteration in waies of blood flow by Doppler consequence and see if the circulation is normal or non. This can be done by mensurating the alteration in the frequence received in the transceiver.

In fact there are a few more types of prenatal medical examination, such as amniocentesis and chronic villus trying. However, the echography is the safest manner for diagnosing. The echography merely involves a transducer

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puting outside the female parent 's venters, while amniocentesis and chronic villus trying necessitate mechanical incursion and trying inside the female parent 's womb or venters, this increases the hazard of abortion during the trials. Despite this fact, echography can merely give an early diagnosing of the female parents and foetuss, it can non handle anomalousnesss or familial diseases. Harmonizing to the trial conducted by RADIUS survey group in 1993, research workers found that obtaining echography has no significantly negative consequence on cut downing perinatal morbidity or mortality among the foetuss or the female parents. Furthermore, the sensing of anomalousnesss really did non change the result of newborn babes. Therefore it is of import to admit that echography is merely a trial whether the foetuss are healthy, but non a intervention to anomalousnesss.

#### Harmful consequence of X ray

X ray is an electromagnetic moving ridge with a wavelength ranged from 0.01 to 10 nanometres ( 0.01-10  $\times 10^{-9}\text{m}$  ). It has a velocity of  $3 \times 10^8 \text{ ms}^{-1}$  in vacuity. In fact, X ray is normally used in medical interventions, such as radiation therapy of malignant neoplastic disease and medical imagination engineering. X ray is produced in an X-ray tubing. In the X-ray tubing, negatrons are accelerated by using a high electromotive force. Electrons so collide with a metal, and the sudden slowing of negatrons consequences in the emanation of X ray.

An X-ray tubing:

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edu/hbase/quantum/imgqua/xtube. gif

Beginning: hypertext transfer protocol: //hyperphysics. phy-astr. gsu.

edu/hbase/quantum/xtube. html

X ray has high ionising power, therefore there are many people worrying about the harmful effects of holding an X-ray diagnosing, particularly pregnant adult females. It is true that a really high dosage of radiation from X ray may ensue in radiation illness. Prolonged and uninterrupted exposure to X-ray besides increases the hazard of malignant neoplastic disease development, and in pregnant adult females, there may besides be a hazard for the foetus to develop childhood malignant neoplastic disease or even abortion. However, it seems that the harmful effects of exposing to X ray are exaggerated. The serious harmful effects mentioned above are merely the consequences of high dose in a short period of clip.

There are different sorts of X raies, one type is used in scanning or diagnosing, one type is used in handling malignant neoplastic disease. The energy stored in different types of X raies is different. For normal X-ray scanning, the dose is highly little. The captive dosage of X ray is measured in rad, which  $1 \text{ rad} = 10 \times 10^{-3} \text{ J kg}^{-1} = 10^{-2} \text{ J kg}^{-1}$ . If a pregnant adult female is holding a chest X ray, the estimated fetal dosage is about 60 millirads, the dosage is about 290 millirads for an abdominal X ray. This is rather a low value, as the dosage from the radiation from outer infinite is around 90-100 millirads. In fact, the hazard of the foetus holding oculus abnormalcies or

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mental deceleration additions merely when the dose exceeds 10 rads, therefore it is really rare that pregnant adult females suffer from harmful effects by the X-ray radiation. Harmonizing to the American Academy of Family Physicians, by and large X rays are safe even for pregnant adult females, and harmonizing to radiotherapists, no individual diagnostic X ray has a radiation dosage important plenty to do inauspicious effects in a underdeveloped embryo or foetus.

Normally physicians will non inquire pregnant adult females to undergo an X-ray scanning, unless when it is pressing and necessary. It is besides suggested that pregnant adult females should state the radiotherapists about the gestation, so that radiotherapists can set the radiation degree to better protect the female parents and the foetuss. To reason, many people are afraid of holding X-ray scanning when they are pregnant, but in fact the hazard is non that high if we compare the dose to the exposure to outer infinite radiation.

An X-ray movie demoing gestation:

hypertext transfer protocol: [//www. neurobodyfit. com/wp-content/uploads/2012/03/xray-pregnancy. jpg](http://www.neurobodyfit.com/wp-content/uploads/2012/03/xray-pregnancy.jpg)

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Concerns of wireless moving ridges and microwaves

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Besides X-ray, some people are referring about the consequence of wireless moving ridges and microwaves on gestation. In fact the consequence of these two types of EM moving ridges is even less than X ray. There has been a survey look intoing the relationship between exposure of wireless moving ridges and microwaves of female physical therapists, and the ratio of abortion. Due to occupational usage, physical therapists are really frequently exposed to medical equipment breathing microwaves diathermy and wireless moving ridges. Harmonizing to the survey, research workers compared the uneven ratios between those pregnant physical therapists and other pregnant adult females. The consequences showed that the hazard of abortion was non associated with reported usage of diathermy equipment, therefore people need non worry excessively much about this issue.

A microwave diathermy:

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com/image/medicm/oimg\_GC04993002\_CA04993086/Microwave\_Diathermy\_HM-801C. jpg

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com/Microwave\_Diathermy\_HM\_801C -- 4993002\_4993086. html

Decision

Waves have been widely used in medical equipment, and there are several applications of moving ridges on gestation. Ultrasonography is the most common and the safest method of antenatal medical examination. Though it

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can be used in diagnosing, it is unable to handle diseases in foetus. Many people concern about the side effects of utilizing X-ray, microwaves and wireless moving ridges, nevertheless it is in fact really safe because the dose of radiation is highly little. Therefore people need non worry excessively much about the hazard of abortion caused by exposure to these moving ridges.