INTRODUCTION

Pregnancy is natural and normal among normal women, almost all women who are married are able and want to have children. However, this is a high-risk event, either to the mother as well as to the foetus inside her. The risk that occurs can be very mild, such as nausea and vomiting only, but it can also be severe that leads to death for both either the mother and the foetus she is carrying.1

Nutrition can be a mitigating factor or in the opposite, it can increase the risk of pregnancy. For example, a diet rich in simple sugars will quickly increase the weight of pregnant women. If not careful, it can cause obesity to the mother at all costs or the foetus will grow very large, causing harmful effects to the mother.1,2

Besides that, good nutrition that has been introduced prior to pregnancy up to the first 1000 days of life can guarantee to improve the quality of life of the foetus and baby who will be born later. Chronic malnutrition in the early age in life, in the short term will interfere with brain growth, body (muscle and bone) growth and metabolic programming and if being left in the long term, in the future, it can be at risk of causing cognitive and educational disorders, impaired immune system and work capacity and besides that, it can also be the basis for the emergence of non-infectious diseases such as diabetes and/or hypertension.3,4,5,6

HEALTHY FOOD TOWARD HEALTHY DIET

Food is not for the body but for the mind, eyes, tongue, nose and maybe ears. The human body does not recognize food but the nutrient composes the food. Once the food is ingested, it will be broken down into nutrients that will nourish the body. Whether the amount is enough and how balanced it is. Therefore, whenever food will be consumed, people must think and calculate whether the nutrients contained in these foods will be able to provide adequate nutrition for the body's needs.7,8

To be said as healthy, food shall meet two main requirements, i.e., it has to be healthy nutritionally and also has to be safe from anything counted as poison and/or pollution.7,9 Within nutrition, healthy food shall be nutritionally adequate to meet the human need, the nutrition composition shall balance and the calorie shall be in control. The adequate amount here means a pregnant and lactating mother shall eat foods to meet the needs of two people, those for the mother and the developing foetus inside her. Therefore, the pregnant mother shall eat more than before. Since people do not eat the same food continuously and there is not any superfood containing all nutrient in enough amount, moderation and food variety shall be put into consideration.9,12

Safe or namely food safety means foods do not contain harmful substances to the body's health. Food, either from animal sources or from plants, can contain harmful substances from itself and/or be contaminated when it is produced, transported, processed or even when it is cooked and/or being stored.13,14 Therefore, food handlers take important roles to the safety of the food.

BRIEF PHYSIOLOGY ON NUTRITION IN PREGNANCY

When someone gets pregnant, two big things are happening to this particular woman, firstly, some hormones will change and secondly, body size and composition will also change. These two are happening due to the occurrence of foetus in the whom.15 The process of pregnancy is divided into three phases where each phase takes 3 monthlies, namely the trimester. The first trimester is referred to as the formation phase, the second trimester is the growth phase, and the third trimester is called the maturation phase.16

Weight must increase during the pregnancy process. It is happening 25% due to the presence of the foetus and the rest are about the changes in body composition and the presence of the placenta. The increase in body weight will look significantly, especially in the second trimester of gestation, and the increment...
is getting less in the third trimester, whilst in the first trimester the increase of body weight shall not be too expected.\textsuperscript{13,16}

**HEALTHY FOOD FOR PREGNANT WOMAN**

The main problem of food intake in the first trimester is the occurrence of morning sickness. In this condition, mothers often cannot consume as much food as they should be. Starting from the second trimester, the mother feels a bit easier. Her appetite for food has returned, but due to the enlargement of the womb, the mother cannot consume large amounts of food at once. So, the mother must consume her food in small portions but more often, and high quality of food, especially in nutrient content, is better than quantity. Within this time, the mother’s weight has to increase significantly as the foetus grows very fast. Problems continue in the third trimester; the mother still has to consume food in a small portion and body weight still increases but the speed shall not be as high as in the second trimester. Looking at this condition, a pregnant mother shall eat more than before she gets pregnant.\textsuperscript{15,16}

The Recommended Daily Allowance (RDA) for any single nutrient during pregnancy is higher than that of her usual amount, and these recommendations are published elsewhere. However, it is hardly difficult when it has to be transferred into the portion of food. Even keeping the composition balanced is not easy when food is being considered.\textsuperscript{17-19} Therefore, following the portion suggested in the Food pyramid model, for Indonesian, it is called the Indonesian Cone Model and added with half up to double the portion of each part daily might be enough to fill in the requirement of the pregnant mother. In addition, based on this model, a balanced diet will also be achieved.\textsuperscript{20,21}

In fact, there will be no food restrictions during pregnancy except simple sugar, salt and alcohol. Those kinds of food shall be limited as high consumption of sugar and salt produce more harmful effects than a benefit.\textsuperscript{22-24} To know that the mother has eaten enough food, she can have her nutrition status measured. And this can be measured easily through the mid-upper arm circumference tool (MUAC) and/or body weight check since there is a strong correlation between the mid-upper arm circumference and body mass index of pregnant mothers and the pregnancy outcome.\textsuperscript{12,25-28} Normal mid-upper arm circumference for healthy pregnant mothers determined ranging between 23cm – 27.6 cm as normal, below it, it will be calculated as low or malnourished and above it will be calculated as overweight or obese.\textsuperscript{29}

There are some suggestions for pregnant mothers regarding the healthiness of the food they shall consume. Firstly, Fresh food is better than processed or even canned food. Often many food additives, preservatives, and colouring agents are added to processed food, though they claim and also has been approved by the FDA that food additives in those particular foods are safe, prevention is better than cure especially for pregnant mother, as most of us don’t know what, in the long term, the side effect of those additives to the future baby.\textsuperscript{26,27} Besides that, canned or processed food contains a lot of sugar or salt. Secondly, the pregnant mother needs plenty of liquid. Drinking water or else is very important since it helps prevent and avoid dehydration.\textsuperscript{31-33} Drinking at least 2600 ml of liquid may be good for a pregnant mother.\textsuperscript{33} Yet alcohol, if possible, shall be avoided during pregnancy, as high alcohol consumption during gestation correlates closely to gestational outcomes such as low birth weight babies.\textsuperscript{24} Cigarette smoking including passive smoker needs to be avoided either, because the contents in cigarette smoke influence negatively to the gestation.\textsuperscript{34,35} Third, there is growing evidence that heavy metals contaminate many kinds of seafood and many plant based foods are sprayed with insecticide. Eating in limitation of fish and seafood and washing all plant based foods well with water before cooking them are worthwhile.\textsuperscript{36-38} Fourth, food consumed during gestation must be well cooked. Food material such as eggs and/or milk is often contaminated by viruses and/or bacteria. Consuming raw food such as raw milk may cause harmful effects to the mother even her gestation too.\textsuperscript{39} Fifth, on top of it, because pregnant mothers often risk hidden nutrient insufficiency or even deficiency, such as Iodine, Iron, Essential fat (omega group), Calcium, supplementation of those particular nutrients or even multivitamins and minerals are worthwhile.\textsuperscript{40-43} Though Vitamin A and vitamin D supplementation alone are still on debate, supplementation may need special precaution since it has potential side effect to the off spring in the future.\textsuperscript{44,45}

**CONCLUSION**

Pregnancy is normal and natural, but full of risks to the mother and the foetus inside her. Nutrition has two sides; in one way it supports the process of gestation or in the other way it causes harmful effects either to the mother as well as the foetus growing inside her. Healthy diet discusses the amount of food that meets the needs of a pregnant mother, balance composition which follows the food pyramid guideline and food safety which means that foods do not contain materials that bring harmful effects to the mother and then impacting to the gestation and/or the foetus. Some limitations need to be considered such as too much salts and sugars, especially simple sugars. There are five suggestions to add on a healthy diet for pregnant mothers such as fresh food consumption, the need for drinking water, avoiding alcohol and cigarette smoking, limiting seafood consumption, cooking the food well before consumption and supplementation.

**REFERENCE**


