

## Effect of Vitamin C on the Birth weight of newborn babies

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**Abstract: Background and Objective:** Vitamin C play a vital role in fetal growth during pregnancy, the aim of the present study was to estimate mothers which taking vitamin C properly having new born babies and detect its normal birth weight. **Methods:** The study was conducted on 100 pregnant women from Department of Obstetrics & Gynaecology, Liaquat University Hospital, Sindh, Pakistan who came to visit Antenatal clinic frequently. 50 pregnant females were taken Vitamin C supplements properly from last 3-6 months 100 mg/day. 50 pregnant females were not taking vitamin C properly. **Results:** Those pregnant females which taken proper vitamin C delivered the child with birth weight 2.3kg→ 2.8 kg (2.4±0.3kg) (1.7±0.2 kg). Those pregnant females which not take proper vitamin C delivered the child with birth weight 1.5→1.9 kg. **Conclusion:** Taking Vitamin C properly highly effect on the birth weight of child. A low vitamin C levels has been associated with premature rupture of the membrane sometimes causing premature delivery.

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**Key words:** Vitamin C, Birthweight, newborn babies, pregnancy

### 1. Introduction

Vitamins are important for growth, and maternal deficiency and also a main cause of intrauterine growth restriction. <sup>(1,2)</sup> Vitamins deficiency may affect growth, cognition, and reproductive performance. <sup>(3)</sup> In pregnant women deficiency of vitamins has been shown to increase risk of low birth weight <sup>(4)</sup>, pregnancy complications and birth defects and at a higher risk for perinatal mortality and morbidity. <sup>(5,6)</sup> There is evidence that supplementation with Vitamin C during pregnancy improves the birth weight of the infant <sup>(7)</sup>. The present investigation was therefore taken up to assess the relationship between vitamin c to birth weight of infant in pregnant women coming for antenatal checkup.

### 2. Materials and Methods

The study was conducted on 100 pregnant women from Department of Obstetrics & Gynaecology, Liaquat University Hospital, Sindh, and who came to visit Antenatal clinic frequently. 50 pregnant females were taken Vitamin C supplements properly from last 3-6 months 100 mg/day. 50 pregnant females were not taking vitamin C properly. The data was collected by oral questionnaire with interview. Pregnancy related information of the subjects such as their weight before conception, the gain in weight during each trimester and hemoglobin status was gathered from their respective medical reports while the post-delivery information was

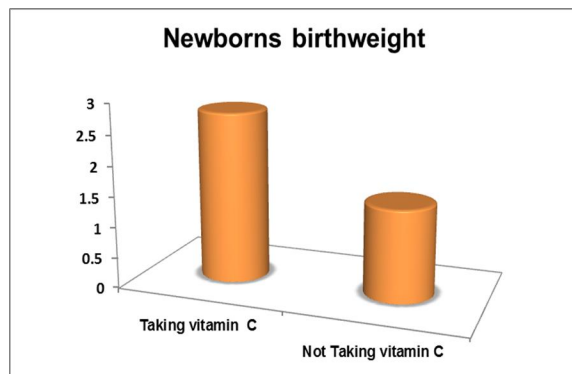
collected from the hospital records. Food habits, dietary pattern followed, foods consumed and avoided during pregnancies were noted down. The frequency of consumption of rich sources of vitamins recorded as daily, once a week, twice a week, sometimes, or never, was also recorded. The all data were calculated by MS Excel.

### 3. Results & Discussion

Figure 1, shows the birth weights of infants born to vitamin C taking and non-taking in pregnant females accordingly to background and stratified by length of gestation. When term and pre-term birth weights were analyzed with vitamin C use in pregnant females, taking vitamin C properly highly effect on the birth weight of child because vitamin C is an antioxidant that helps to produce collagen, a protein vital to tissue repair. It is also critical to the development of a fetus's muscles, cartilage, bones, skin and eyes. Vitamin C also helps an expectant mom's body to absorb iron, which is necessary for the production of red blood cells.

Those pregnant females which taken proper vitamin C delivered the child with birth weight 2.3kg→ 2.8 kg (2.4±0.3kg) (1.7±0.2 kg). Those pregnant females which not taking proper vitamin C delivered the child with birth weight 1.5→1.9 kg. There is an increase in the recommendation of vitamin C intakes of 10mg/d during pregnancy taking up to 50mg/d <sup>(8,9)</sup>. Women are able to achieve this through

their diet alone as long as they consume a variety of fruit and vegetables throughout the day. Using the guideline during pregnancy will help to achieve a good fruit and vegetable consumption<sup>(10)</sup>. Vitamin C is a water soluble vitamin meaning that it is not stored within the body, but used when it is in circulation and excreted when there is an overabundance. At times of increased requirement such as during pregnancy, consumption should be increased to ensure an adequate and continuous supply of vitamin C for optimum health of the mother and her fetus. Vitamin C is specifically required for synthesis and maintenance of collagen which is a major component of the chorioamniotic membrane, and low vitamin C levels have been associated with premature rupture of the membrane sometimes causing premature delivery<sup>(11, 12)</sup>. This intake would also meet the increased intake of 50mg/d required during pregnancy.<sup>(13-15)</sup> Vitamin C also helps an expectant mom's body to absorb iron, which is necessary for the production of red blood cells. Pregnant women should take 50 mg of vitamin C per day. And as most of us know, it can be found in citrus fruits such as oranges, lemon, grapefruit, kiwi and tomatoes, but it is also present in vegetables such as broccoli, Brussels sprouts, raw cabbage and sweet potatoes.



**Figure 1, shows the birth weights of newborns to vitamin C taking and non-taking in pregnant females**

### Conclusion

It is concluded that taking Vitamin C properly highly effect on the birth weight of child. Vitamin C is an antioxidant that helps to produce collagen, a protein vital to tissue repair. It is also critical to the development of a fetus's muscles, cartilage, bones, skin and eyes. A low vitamin C levels has been associated with premature rupture of the membrane sometimes causing premature delivery.

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