**Impact of preterm birth and post-discharge growth on cardiometabolic outcomes at school age: A case control study**

Jungha Yun1#,a, Young Hwa Jung1#,b, Seung Han Shin1\*, In Gyu Song1,c, Young Ah Lee1, Choong Ho Shin1, Ee-Kyung Kim1, Han-Suk Kim1

1Department of Pediatrics, Seoul National University Children’s Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea

#Jungha Yun and Young Hwa Jung contributed equally to this work.

Current address:

aDepartment of Pediatrics, CHA Ilsan Medical Center, Goyang-si, Republic of Korea

bDepartment of Pediatrics, Seoul National University Bundang Hospital, Sungnam-si, Republic of Korea

cDepartment of Pediatrics, Severance Children’s Hospital, Yonsei University College of Medicine, Seoul, Republic of Korea

**\*Corresponding Author:** Seung Han Shin, Ph.D., Department of Pediatrics, Seoul National University College of Medicine, 101, Daehak-ro, Jongno-gu, Seoul, Republic of Korea, Tel.: +82 2 2072 3555, Fax: +82 2 2072 0590, E-mail: [revival421@snu.ac.kr](mailto:revival421@snu.ac.kr)

**Supplementary materials**

Questionnaires of neonatal nutrition and physical activity at school-age

1. Basic information

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name |  | Birthday | | ( / / ) YYYY/MM/DD | | | | | Siblings: birth order (    ) of the total number (    ) | | |
| Parents | Paternal Height: (          )cm, Weight (         ) kg  Maternal Height: (          )cm, Weight (         )kg , Gestational DM (□Yes / □No)  Mother's menarche: ( ) years of age | | | | | | | | | | |
| Family history |  | | Father/  Mother | Paternal Grand  father/mother | | | Maternal Grand  father/mother | | Sibling 1/  Sibling 2 | Aunt/  Uncle | |
| DM | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| High cholesterol | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Hypertension | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Heart disease | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Stroke | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Unexpected death <55 years | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Thyroid disease | | □ / □ | □ / □ | | | □ / □ | | □ / □ | □ / □ | |
| Past history | □ Seizure □ Meningitis □ Brain trauma □ Other chronic disease (                      ) | | | | | | | | | | |
| Medications | □ Nutrients □ Hurbal Medicine □ Vitamins □ Others  (                      ) | | | | | | | | | | |
| Past 2 weeks | Any history of respiratory or gastrointestinal infections?  □Yes / □No | | | | | | | | | | |
| Symptoms | □ Headache | □Vomiting | | | □Nocturia | □Visual disturbance | | □Personality change | | | □Fall down |
| Premature thelarche: □Yes / □No | | | | | | | | | | | |

1. Neonatal and infant nutrition

|  |  |  |
| --- | --- | --- |
|  | When did it start | When did it end |
| Any breastfeeding?  □Yes / □No | □ (    ) days after birth | □ Colostrum only/ |
| □ Within 1 month |
| □ Until (     ) months |
| Breast milk fortifiers?  □Yes / □No | □ (    ) days after birth | □ Until (     ) months |
| Any formula feeding?  □Yes / □No | □ Within 1 month | □ Within 1 month |
| □ Since (     ) months | □ Until (     ) months after birth |
| Duration of preterm formula? | □ not applicable | □ Until (     ) months after birth |
| Any dietary supplements for additional calorie?  (other than those mentioned above) | □ not applicable | □ Until (     ) months after birth |
| When did your child have more formula than the breast milk? | □ Within 1 month  □ Since (     ) months | |
| When did your child start weaning? | Since (     ) months | |
| When did your child start to eat like adults? | Since (     ) months | |

3. Does the child have any other diseases? □Yes / □No

If yes, ( )

4. Are there any other medications your child is taking regularly? (recent 2 years)

□Yes ( ) □No

5. Physical activity

1) How many days did your child have more than 10 minutes of vigorous physical activity that requires large amount of oxygen consumption and increases heart rate in the past week?

□ Not at all □ 1 day □ 2 days □ 3 days □ 4 days □ 5 days □ 6 days

□ 7 days (everyday)

|  |
| --- |
| The examples of vigorous physical activity: Jogging (running), soccer, basketball, rope skipping, judo, taekwondo, kendo, rock climbing, mountain climbing, aerobic dance, singles tennis, squash, hockey, roller skating, bicycle (fast), swimming (fast), carrying heavy objects, etc. |

How many minutes per day did your child usually do this vigorous physical activity?

( ) hours ( ) minutes per day

2) How many days did your child have more than 10 minutes of moderate physical activity, which is equivalent in intensity to brisk walking or bicycling in the past week?

□ Not at all □ 1 day □ 2 days □ 3 days □ 4 days □ 5 days □ 6 days

□ 7 days (everyday)

|  |
| --- |
| The examples of moderate physical activity: Volleyball, badminton, table tennis, swimming (slowly), doubles tennis, volume/fork dance, carrying light objects (except for walking) |

How many minutes per day did your child usually do this moderate physical activity?

( ) hours ( ) minutes per day

3) How many days did your child go for a walk outside for at least 10 minutes at a time in the past week?

□ Not at all □ 1 day □ 2 days □ 3 days □ 4 days □ 5 days □ 6 days

□ 7 days (everyday)

While walking outdoors, how long does your child usually walk in a day?

( ) hours ( ) minutes per day

4) How many days did your child perform flexibility exercises such as stretching and free hand exercise in the past week?

□ Not at all □ 1 day □ 2 days □ 3 days □ 4 days □ 5 days □ 6 days

□ 7 days (everyday)

5) How many days did your child do muscle-strengthening activities like push-ups, sit-ups, dumbbells, weights, and iron bars in the past week?

□ Not at all □ 1 day □ 2 days □ 3 days □ 4 days □ 5 days □ 6 days

□ 7 days (everyday)

6) How many hours per day does your child watch TV on average?

Average of ( ) hours per day during weekdays,

Average of ( ) hours per day during the weekend

7) How many hours per day does your child spend time playing computers (including searching the Internet) or game consoles on average?

Average of ( ) hours per day during the weekdays,

Average of ( ) hours per day during the weekend

8) How many hours per day does your child sleep on average?

Average ( \_) hours per day during the weekdays,

Average ( ) hours per day during the weekend