**Supplementary Table 1. Intervention sessions and the topics covered**

|  |
| --- |
| **Educational intervention for Parents**  |
| ***Session 1*** | *Exposure and health effects of OP pesticides* |
| 1. Definition of pesticides
2. Classification according to the effect
3. Action and metabolization of OPs in the organism
4. Routes of exposure; symptoms of acute and chronic poisoning
5. Result of studies conducted in the Maule Region on exposure to OP and effects on health.
6. Synthesis and lessons learned. Analysis of a video about exposure and effects of pesticides and the relevance of the measures of personal protection
 |
| ***Session 2:*** | *Correct use of pesticides and prevention measures* |
| 1. Concepts about pesticides and agricultural pests in Chile
2. Toxicological classification of pesticides according to WHO
3. Harmful effects due to exposure to pesticides
4. First aid for OP poisoning
5. Prevention of poisonings by pesticides
6. Regulations in Chile.
 |
| ***Session 3:*** | *Demonstration about the cleaning of produce before consumption* |
| 1. Importance of fruit and vegetable consumption
2. Consumption of fruits and vegetables in children;
3. Recommendation of consumption of fruits and vegetables
4. Hygiene of fruits and vegetables
5. Safe consumption of fruits and vegetables
6. cleaning of fruits and vegetables.

Group analysis and discussion of a video about a study of pesticide residues in vegetables. |
| ***Session 4:*** | *Strategies to reduce the use of pesticides at home and at work* |
| 1. What are organic pesticides?
2. Examples of organic pesticides
3. Homemade preparation of organic pesticides for the domestic control of pests.

Analysis and group discussion of a video about natural home-made pest repellents  |
| **Educational intervention for Children** |
| ***Session 1:*** *What are OP pesticides and how they can affect our bodies* |
| 1. Concept of pesticides and examples
2. how children are exposed to pesticides
3. how pesticides are processed in he body
4. effects on the health of children and adults.

Group discussion of a video about children showing the differences of vegetables treated with pesticides and vegetables treated without pesticides. |
| ***Session 2:*** *How can children and adults be exposed to OP pesticides*1. Reminder of the last session
2. types of pesticides
3. risks of the use of pesticides
4. How do pesticides affect to children?
5. How to prevent exposure to pesticides in children?

Analysis of a cartoon about the use of pesticides in the agricultural fields |
| ***Session 3:*** *How can we prevent the effects of OP pesticides in our home, school and community?*1. OP pesticides used at home and in the farms
2. Acute and chronic intoxication
3. How can we reduce exposure to OP pesticides?
4. Analysis of poisoning prevention in children

Analysis of videos and drawings on poisoning by pesticides. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **DAPs metabolites\*** | **Intervention period** | **Control Group** | **Intervention Group** |  |
| **Geometric Mean****[Geometric SD]** | **Min-Max** | **% above****LOD** | **Geometric Mean****[Geometric SD)** | **Min-Max** | **%****above****LOD** | ***p*-value\*****Mann Whitney** |
| **DEP μg/L** | Pre  | 1.94(7.47) | 0.10 | 25.2 | 100 | 1.30(5.21) | <LOD | 17.9 | 94.23 | 0.2007 |
| Post  | 2.92(8.81) | 0.40 | 72.00 | 100 | 3.63(12.57) | 0.50 | 99.2 | 100 | 0.5034 |
| **DETP μg/L** | Pre  | 0.46(1.62) | <LOD | 5.71 | 86.36 | 0.28(0.82) | <LOD | 3.13 | 71.15 | 0.0532 |
| Post  | 0.72(2.16) | <LOD | 7.14 | 95.45 | 0.65(2.06) | <LOD | 16.7 | 96.15 | 0.5613 |
| **DMP μg/L** | Pre  | 3.74(10.66) | 0.57 | 40.5 | 100 | 1.80(6.75) | <LOD | 49.0 | 96.15 | 0.0053 |
| Post  | 4.62(14.86) | 0.56 | 32.3 | 100 | 7.16(27.07) | 0.29 | 79.4 | 100 | 0.1464 |
| **DMTP μg/L** | Pre  | 1.82(7.34) | 0.17 | 33.3 | 100 | 0.81(3.19) | <LOD | 15.7 | 94.23 | 0.0082 |
| Post  | 3.58(17.95) | 0.21 | 98.5 | 100 | 3.34(16.48) | <LOD | 196.00 | 98.08 | 0.8657 |
| **DMDTP μg/L** | Pre  | 0.18(0.60) | <LOD | 3.0 | 43.2 | 0.10 ( 0.22) | <LOD | 2.17 | 44.00 | 0.0855 |
| Post  | 0.31(1.47) | 0.44 | 64.55 | 100 | 0.25(1.08) | <LOD | 20.70 | 68.63 | 0.7115 |
| **DEP****nmol/L** | Pre  | 12.64(48.52) | 0.70 | 163.63 | 100 | 8.50(33.88) | 0.41 | 116.23 | 94.23 | 0.2007 |
| Post | 18.9(57.23) | 2.61 | 467.53 | 100 | 23.59(81.67) | 3.26 | 644.15 | 100 | 0.5034 |
| **DETP****nmol/L** | Pre  | 2.74(9.53) | 0.41 | 33.58 | 86.36 | 1.66(4.88) | 0.41 | 18.41 | 71.15 | 0.0532 |
| Post  | 4.28(12.72) | 0.41 | 42.00 | 95.45 | 3.87(12.13) | 0.41 | 98.23 | 96.15 | 0.5613 |
| **DMP nmol/L** | Pre  | 29.74(84.66) | 4.52 | 321.42 | 100 | 14.30(53.61) | 0.55 | 388.88 | 96.15 | 0.0053 |
| Post  | 36.69 (117.93) | 4.5 | 256.34 | 100 | 56.89(214.88) | 2.29 | 630.16 | 100 | 0.1464 |
| **DMTP****nmol/L** | Pre  | 12.88(51.69) | 1.22 | 234.5 | 100 | 5.77(22.48) | 0.49 | 110.56 | 94.23 | 0.0082 |
| Post  | 25.21(126.43) | 1.46 | 693.66 | 100 | 23.55(116.05) | 0.49 | 1380.28 | 98.08 | 0.8657 |
| **DMDTP****nmol/L** | Pre  | 1.14 (3.84) | 0.44 | 18.9 | 43.2 | 0.68(1.44) | 0.44 | 13.73 | 44.00 | 0.1177 |
| Post  | 1.96 (9.32) | 1.46 | 693.66 | 100 | 1.61(6.87) | 0.44 | 131.01 | 68.63 | 0.7115 |
| DAPs= dialkyl phosphate; DEP=Diethyl phosphate; DETP= Diethyl thiophosphate; DMP= Dimethyl phosphate; DMTP= Dimethyl thiophosphate; DMDTP=Dimethyl dithiophosphate; LOD=limit of detection (0.1 g/L). \* DEDTP, Diethyl dithiophosphate was not included in analysis because results were below the LOD in all participating children.  |

**Supplementary Table 2. Urinary concentrations of dialkylphosphates.**