**CLASSIFICATION OF MALNUTRITION IN CHILDREN**  
**DEFINITIONS OF MALNUTRITION**

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| **Classification** | **Definition** | **Grading** | | |
| Gomez | Weight below % median WFA | Mild (grade 1) Moderate (grade 2) Severe (grade 3) | 75%–90% WFA 60%–74% WFA <60% WFA |
| Waterlow | z-scores (SD) below median WFH | Mild Moderate Severe | 80%–90% WFH 70%–80% WFH <70% WFH |
| WHO (wasting) | z-scores (SD) below median WFH | Moderate Severe | -3%</= z-score < -2 z-score < -3 |
| WHO (stunting) | z-scores (SD) below median HFA | Moderate Severe | -3%</= z-score < -2 z-score < -3 |
| Kanawati | MUAC divided by occipitofrontal head circumference | Mild Moderate Severe | <0.31 <0.28 <0.25 |
| Cole | z-scores of BMI for age | Grade 1 Grade 2 Grade 3 | BMI for age z-score < -1 BMI for age z-score < -2 BMI for age z-score < -3 |

*Abbreviations: BMI, body mass index; HFA, height for age; MUAC, mid-upper arm circumference; SD, standard deviation; WFA, weight for age; WFH, weight for height; WHO, World Health Organization.*  
  
**Gomez Classification:** The child’s weight is compared to that of a normal child (50th percentile) of the same age. It is useful for population screening and public health evaluations.

* Percent of reference weight for age = [(patient weight) / (weight of normal child of same age)] \* 100

**Waterlow Classification:** Chronic malnutrition results in stunting.  Malnutrition also affects the child’s body proportions eventually resulting in body wastage.

* Percent weight for height = [(weight of patient) / (weight of a normal child of the same height)] \* 100
* Percent height for age = [(height of patient) / (height of a normal child of the same age)] \* 100

**CLASSIFICATION OF MALNUTRITION IN CHILDREN**

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|  | Mild Malnutrition | Moderate Malnutrition | Severe Malnutrition |
| Percent Ideal Body Weight | 80-90% | 70-79% | < 70% |
| Percent of Usual Body Weight | 90-95% | 80-89% | < 80% |
| Albumin (g/dL) | 2.8-3.4 | 2.1-2.7 | < 2.1 |
| Transferrin (mg/dL) | 150 – 200 | 100 – 149 | < 100 |
| Total Lymphocyte Count (per µL) | 1200 – 2000 | 800 – 1199 | < 800 |

**Wellcome Classification:** evaluates the child for edema and with the Gomez classification system.

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| Weight for Age (Gomez) | With Edema | Without Edema |
| 60-80% | kwashiorkor | undernutrition |
| < 60% | marasmic-kwashiorkor | marasmus |

**References:**

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