# MANGO PROJECT

## RANDOMIZED CONTROL TRIAL IN NON-INFERIORITY

**Where:** 10 health centers in the district of Fada N'Gourma, Burkina Faso

**When:** 2015-2020

**Who:** 801 children aged 6 to 59 months
SAM according to WHZ< -3 and/or MUAC< 115mm with appetite

Standard Dose
n=399

Reduced Dose
n=402

Reduced dose from 3rd week onward, according to the child's weight.

**What:** To prove under ideal conditions the efficacy of a reduced dose of RUTF compared to a standard dose during the treatment of uncomplicated Severe Acute Malnutrition in children aged 6-59 months.

**Scientific Partners and Funders :**

CIFF, ECHO, HIF- ELRHA, AAH Foundation
Univ. of Copenhague, Centers for Disease Control and Prevention, (CDC, USA)

# MAIN RESULTS

## A REDUCED DOSE OF RUTF DOES NOT AFFECT WEIGHT GAIN OF SAM CHILDREN BUT DOES AFFECT HEIGHT GAIN OF YOUNGER CHILDREN

### Data Collection

Double anthropometric measurements (weight, height, and MUAC) and clinical examination at each visit from admission to discharge.

Discharge criteria:
- Recovery: WHZ ≥ -2 and/or MUAC ≥ 125mm (aligned with admission criteria) for 2 consecutive weeks.
- Defaulter: absent for 3 consecutive weeks
- Death: during treatment
- Non-respondant: did not reach recovery criteria by 16 weeks
- Referral: referred to hospital due to danger signs
- Relapse: became SAM again 3 months after recovery

Treatment followed Burkina Faso's national guidelines in all aspects, except for the dose of RUTF.
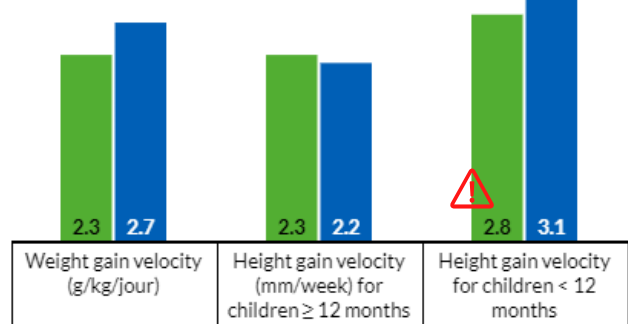
### Results

There is no significant difference between the two groups of children in terms of recovery, defaulter, death, referral, non-respondant, or relapse rates. The average length of stay was 56 days (8 weeks).

*Programmatic results of SAM treatment according to the dose of RUTF*

| Rate in % | Reduced dose (n=399) | Standard dose (n=401) | *p* -value |
|---|---|---|---|
| Recovery | 52.7 | 55.4 | 0.45 |
| Recovery (SPHERE standards 2018) | 68.0 | 72.0 | N/A |
| Death | 0.3 | 0.3 | N/A |
| Defaulter during treatment | 12.2 | 8.5 | 0.09 |
| Referral | 19.2 | 20.1 | 0.80 |
| Non-respondant | 12.7 | 12.5 | 0.95 |
| Relapse after 3 months | 2.4 | 1.8 | 0.69 |

The weight gain velocity is not different for the two groups. Note that a reduced dose slows the height gain velocity of children under 12 months.



*Weight and height gain velocity of SAM children under reduced and standard dose of RUTF*

| | Weight gain velocity (g/kg/jour) | Height gain velocity (mm/week) for children ≥ 12 months | Height gain velocity for children < 12 months |
|---|---|---|---|
| Reduced dose | 2.3 | 2.3 | 2.8 |
| Standard dose | 2.7 | 2.2 | 3.1 |

● Reduced dose (n=399)  ● Standard dose (n=401)

⚠ Significant difference (p<0.05)

### Key takeaways

The reduced dose is effective in the treatment of SAM for this population and in this context, in terms of weight gain velocity and rates of recovery, defaulter, death and other indicators. But this dosing appears insufficient for young children (<12 months) in terms of height gain velocity.

## GLOSSARY

**MUAC** Mid Upper Arm Circumference
**RUTF** Ready-to-Use Therapeutic Food
**SAM** Severe Acute Malnutrition
**WHZ** Weight For Height Z-score