



Supplementary Figure S1. Relative abundance of bacteria and correlations between bacteria and study variables **(A) - top** - Differences between the Firmicutes/Bacteroidetes ratio between the 2 times (baseline-final) between both study groups -gluten and placebo-, measured in relative abundance; **(B) - top** - Differences between the Basidiomycota/Ascomycota ratio between the baseline-final and between both study groups, measured in relative abundance. **(A, B) - in the lower area** - Hierarchical clustering of correlations using the Spearman's test between bacterial genera (bottom) and study variables (right side) in the gluten and placebo group.

Supplementary Table S1. Migraine symptoms by time according to study group and with professional diagnosis of migraine.

| | Gluten group (n = 12) | | | Placebo group (n = 12) | | | Δ Intergroup analysis |
|---------------------------|--------------------------------------|--------------|----------|---------------------------------------|---------------|-------------|----------------------------------|
| Migraine | Basal | Final | P | Basal | Final | p | |
| Pain (0–10) | 8 (6-8) | 7 (6-8) | .754 | 6.33 ± 2.46 | 5.83 ± 2.13 | .600 | Ns |
| Days with pain (3 months) | 7.5 (5.5-40.5) | 3 (1.5-13.5) | .109 | 31.17 ± 30.02 | 11.83 ± 13.11 | .037 | Ns |
| MIDAS | 26 (11.5-61.5) | 4.5 (0-40.5) | .388 | 57.33 ± 53.58 | 16.25 ± 33.65 | .019 | Ns |

MIDAS, Migraine Disability Assessment; NS, not significant.

Supplementary Table S2. Symptoms of atopic dermatitis by time according to the study group and with professional diagnosis of dermatitis.

| | Gluten group (n = 6) | | | Placebo group (n = 14) | | | Δ Intergroup Analysis |
|----------------------------|-------------------------------------|--------------|----------|---------------------------------------|-----------------------|-------------|--------------------------------------|
| Atopic dermatitis | Basal | Final | P | Basal | Final | p | |
| Itchy skin (0–10) | 3.5 ± 4.18 | 2.33 ± 3.67 | .135 | 6.07 ± 2.24 | 3 ± 3.31 | .001 | Ns |
| Itchy scalp (0–10) | 0 (0-0) | 0 (0-0) | .317 | 2.5 (0-8) | 0 (0-6) | .031 | Ns |
| Dry skin intensity (0–10) | 1.5 (0-4) | 0 (0-5) | .655 | 6.86 ± 2.6 7.5 (6-8) | 3 ± 3.35 1.5 (0-7) | .001 | Ns |
| Pimples (0–10) | 0 (0-0) | 0 (0-0) | .317 | 0 (0-5) | 0 (0-0) | .063 | Ns |
| Neck and chest area (0–10) | 0 (0-0) | 0 (0-0) | .317 | 0 (0-5) | 0 (0-0) | .031 | Ns |
| Face (0–10) | 0 (0-0) | 0 (0-0) | .317 | 0 (0-6) | 0 (0-0) | .375 | Ns |
| Arms and legs (0–10) | 0 (0-0) | 0 (0-0) | .317 | 0 (0-8) | 0 (0-0) | .063 | Ns |
| Whole body (0–10) | 0 (0-0) | 0 (0-0) | .317 | 2.5 (0-8) | 0 (0-0) | .018 | Ns |
| TIS | 0.5 (0-2) | 0 (0-1) | .655 | 2.93 ± 2.27 | 1.71 ± 1.73 | .051 | Ns |

TIS, Three Item Severity score.

Supplementary Table S3. Iron metabolism, proteins, intestinal permeability, white, red and platelet series by time according to the study group.

| | Gluten group (n = 17) | | | Placebo group (n = 27) | | | Δ Intergroup analysis |
|--------------------------------------|-----------------------------|-------------------------|----------|------------------------------|---------------------------|-------------|------------------------------------|
| Iron metabolism | Basal | Final | p | Basal | Final | p | |
| Iron ($\mu\text{g/dL}$) | 92.94 \pm 43.97 | 90.18 \pm 39.12 | .772 | 88.70 \pm 34.83 | 79.57 \pm 39.23 | .267 | ns |
| Ferritin (ng/mL) | 57 (31- 131) | 63 (25- 133) | .454 | 59 (23- 93.5) | 70 (28- 111.5) | .248 | ns |
| Transferrin (mg/dL) | 234 (222- 254) | 251 (215- 277) | .210 | 240 (222.5- 265.5) | 244 (222.5- 262.5) | .029 | ns |
| Proteins | | | | | | | |
| C- Reactive Protein (mg/dL) | 0.10 (0.05- 0.20) | 0.10 (0.05- 0.10) | .424 | 0.1 (0.1- 0.35) | 0.1 (0.1- 0.25) | 1 | ns |
| Intestinal permeability | | | | | | | |
| Zonulin (ng/mL) | 90.26 \pm 51.8 | 89.66 \pm 55.24 | .963 | 111.74 \pm 74.23 | 97.03 \pm 61.95 | .401 | ns |
| White blood cells | | | | | | | |
| Leukocytes | 6 (4.6-7) | 5.7 (4.5- 6.7) | .332 | 5.9 (5.25- 7.4) | 6.25 (5.25- 7.65) | .572 | ns |
| Neutrophils | 58.1 (55.4- 60.4) | 55.2 (51.1- 60.4) | .909 | 56.45 (51.65-61) | 55.5 (51.55- 59.75) | .792 | ns |
| Lymphocytes | 31.2 (28.5- 33.9) | 33.5 (29.4- 36.5) | .332 | 33.15 (29.15- 35.9) | 32.6 (27.05- 35.9) | .531 | ns |
| Monocytes | 7.8 (7.1- 9.4) | 7.8 (7.4- 9.6) | .791 | 7.45 (6.45- 9.4) | 7.45 (6.2- 9.15) | .664 | ns |
| Eosinophils | 2.1 (1.4- 3.1) | 2.1 (1.4- 2.6) | .607 | 1.95 (1.55- 3.1) | 1.95 (1.75-3) | .701 | ns |
| Basophils | 0.7 (0.5- 0.8) | 0.7 (0.5- 0.8) | .534 | 0.6 (0.4- 0.9) | 0.6 (0.5- 0.75) | .526 | Ns |

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|------------------------|------------------|------------------|------|---------------------|--------------------|------|-----------|
| Absolute neutrophils | 3.4 (2.5-4) | 3.2 (2.8-3.6) | .607 | 3.45 (2.65-4.15) | 3.55 (2.8-4.45) | .087 | Ns |
| Absolute lymphocytes | 1.8 (1.3-1.9) | 1.7 (1.5-2.1) | .454 | 1.95 (1.65-2.4) | 1.9 (1.7-2.3) | .738 | Ns |
| Absolute monocytes | 0.5 (0.4-0.5) | 0.5 (0.4-0.5) | .491 | 0.5 (0.4-0.6) | 0.5 (0.4-0.6) | .648 | Ns |
| Absolute eosinophils | 0.1 (0.1-0.2) | 0.1 (0.1-0.1) | 1 | 0.1 (0.1-0.2) | 0.1 (0.1-0.2) | .791 | Ns |
| Absolute basophils | 0.1 (0-0.1) | 0 (0-0.1) | .125 | 0 (0-0.1) | 0 (0-0.1) | 1 | Ns |
| Red blood cells | | | | | | | |
| Red blood cells | 4.4 (4.2-5) | 4.6 (4.2-4.9) | .969 | 4.5 (4.2-4.75) | 4.5 (4.3-4.85) | .218 | Ns |
| Hemoglobin | 13.5 (13-15) | 14 (12.9-14.6) | .956 | 13.65 (12.7-14.35) | 13.7 (12.65-14.2) | .269 | Ns |
| Hematocrit | 40.8 (38.9-45.7) | 41.6 (39.5-44.1) | .964 | 41 (37.85-42.65) | 40.5 (38-42.55) | .406 | Ns |
| MCV | 89.5 (87.8-93.5) | 89.9 (88.5-92.8) | .844 | 90.35 (87.9-93.25) | 90.9 (88.4-92.9) | .359 | Ns |
| MCH | 30.4 (29.3-31.1) | 30.1 (29.1-31.2) | .605 | 30.15 (28.95-31.8) | 30.45 (29-31.6) | .269 | Ns |
| MCHC | 33 (32.4-34) | 33.2 (32.8-33.5) | .938 | 33.4 (32.75-34) | 33.45 (32.9-34.15) | .838 | Ns |
| RDW | 13 (12.4-13.5) | 13 (12.5-13.2) | .607 | 12.85 (12.4-13.25) | 12.65 (12.3-13.35) | .237 | Ns |
| Platelets | | | | | | | |
| Platelets | 235 (186-262) | 220 (197-252) | .332 | 266.5 (227.5-290.5) | 260 (235.5-276.5) | 1 | Ns |

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|-----|-------------------------|-------------------------|------|---------------------------|------------------------|------|-----------|
| MPV | 11.6 (11.3- 12.2) | 11.8 (11.1- 12.4) | .321 | 11.25 (10.6- 12.05) | 11.3 (10.55- 12) | .786 | Ns |
|-----|-------------------------|-------------------------|------|---------------------------|------------------------|------|-----------|

MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; MCHC, mean corpuscular hemoglobin concentration; RDW, red cell distribution width; MPV, mean platelet volume.