**Manuscript title:** Vitamin D Supplementation Protects Against Bone Loss Following Inhalant Organic Dust and Lipopolysaccharide Exposures in Mice

**Online Resource 1:** Quantitative overview of trabecular bone in distal femur and proximal tibia using micro-CT analysis in mice treated with intranasal inhalation of saline, 12.5% organic dust extract (ODE), or 100 ng lipopolysaccharide (LPS) for 3 weeks while fed a normal rodent chow diet containing approximately 4 IU D/g of vitamin D.

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| --- | --- | --- | --- | --- |
| **Parameter** | **Saline** **(n=4)** | **ODE** **(n=4)** | **LPS** **(n=4)** | **p-value** |
| **Femur** |   |   |   |   |
| Bone mineral density, g/mm3 | 0.33 ± 0.007 | 0.31 ± 0.003\* | 0.29 ± 0.005\*# | 0.002 |
| Percent bone volume, % | 9.77 ± 0.20 | 8.71 ± 0.29\* | 7.03 ± 0.42\*# | 0.001 |
| Specific bone surface, mm-1 | 92.38 ± 1.73 | 103.06 ± 1.78\* | 111.37 ± 2.00\*# | 0.001 |
| Trabecular pattern factor , mm-1 | 23.05 ± 0.15 | 24.98 ± 0.22 | 30.83 ± 1.57\*# | 0.001 |
| Average object area/slice, mm2 | 0.004 ± 0.0002 | 0.003 ± 0.0001\* | 0.002 ± 0.0002\*# | 0.001 |
| Trabecular thickness, mm | 0.040 ± 0.001 | 0.034 ± 0.001\* | 0.032 ± 0.001\* | 0.001 |
| Trabecular number, mm-1 | 2.44 ± 0.08 | 2.53 ± 0.062 | 2.18 ± 0.14 | NS |
| Trabecular separation, mm | 0.209 ± 0.004 | 0.206 ± 0.003 | 0.210 ± 0.004 | NS |
| **Tibia** |   |   |   |   |
| Bone mineral density, g/mm3 | 0.32 ± 0.005 | 0.30 ± 0.008\*  | 0.28 ± 0.001\* | 0.003 |
| Percent bone volume, % | 8.36 ± 0.27 | 7.02 ± 0.70 | 5.70 ± 0.25\* | 0.009 |
| Specific bone surface, mm-1 | 88.56 ± 0.97 | 103.43 ± 5.92\* | 111.20 ± 1.26\* | 0.004 |
| Trabecular pattern factor , mm-1 | 27.46 ± 0.66 | 30.52 ± 2.02 | 35.40 ± 1.53\*# | 0.015 |
| Average object area/slice, mm2 | 0.0026 ± 0.0001  | 0.0021 ±0.0002 | 0.0018 ± 0.001\*  | 0.031 |
| Trabecular thickness, mm | 0.054 ± 0.001 | 0.048 ± 0.002\* | 0.044 ± 0.001\*  | 0.004 |
| Trabecular number, mm-1 | 1.56 ± 0.08 | 1.44 ± 0.10 | 1.28 ± 0.08\* | NS |
| Trabecular separation, mm | 0.232 ± 0.006 | 0.231 ± 0.002 | 0.230 ± 0.003 | NS |

Mean ± SEM of treatment groups with N=4 mice/group combined from independent studies. P-value denotes statistical significance (ANOVA) across treatment groups. Statistical significance denoted by asterisks (\*p<0.05) as compared to saline. Number signs denote statistical significance (#p<0.05) between ODE and LPS. NS: not significant.