**Supplementary Material**

**Supplementary Table 1.** Quality assessment of the included studies according to the Appraisal Tool for Cross-Sectional Studies (AXIS).

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|  | Hong et at, 2016 [14] | Valassi et al, 2016 [19] | Kuzma et al, 2019 [18] | Valassi et al, 2019 [20] | Calatayud et al, 2021 [13] | Sala et al, 2021 [15] | Sohoran et al, 2021 [16] | Jawiarczyk-Przybyłowska et al, 2022 [17] |
| 1. Were the aims/objectives of the study clear? | Y | Y | Y | Y | Y | Y | Y | Y |
| 2. Was the study design appropriate for the stated aim(s)? | Y | Y | Y | Y | Y | Y | Y | Y |
| 3. Was the sample size justified? | Y | N | N | N | N | N | N | N |
| 4. Was the target/reference population clearly defined? (Is it clear who the research was about?) | Y | Y | Y | Y | Y | Y | Y | Y |
| 5. Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation? | Y | Y | Y | Y | Y | Y | Y | Y |
| 6. Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation? | Y | Y | Y | Y | Y | Y | Y | Y |
| 7. Were measures undertaken to address and categorise non-responders? | N | N | N | N | N | N | N | N |
| 8. Were the risk factor and outcome variables measured appropriate to the aims of the study? | Y | Y | Y | Y | Y | Y | Y | Y |
| 9. Were the risk factor and outcome variables measured correctly using instruments/ measurements that had been trialled, piloted or published previously? | Y | Y | Y | Y | Y | Y | Y | Y |
| 10. Is it clear what was used to determined statistical significance and/or precision estimates? (eg, p values, confidence intervals) | Y | Y | Y | Y | Y | Y | Y | Y |
| 11. Were the methods (including statistical methods) sufficiently described to enable them to be repeated? | Y | Y | Y | Y | Y | Y | Y | Y |
| 12. Were the basic data adequately described? | Y | N | Y | Y | Y | Y | Y | Y |
| 13. Does the response rate raise concerns about non-response bias? | U | U | N | N | U | N | U | U |
| 14. If appropriate, was information about non-responders described? | N | N | N | N | N | N | N | N |
| 15. Were the results internally consistent? | Y | Y | Y | Y | Y | Y | Y | Y |
| 16. Were the results for the analyses described in the methods presented? | Y | Y | Y | Y | Y | Y | Y | Y |
| 17. Were the authors’ discussions and conclusions justified by the results? | Y | Y | Y | Y | Y | Y | Y | Y |
| 18. Were the limitations of the study discussed? | Y | Y | Y | Y | Y | Y | Y | Y |
| 19. Were there any funding sources or conflicts of interest that may affect the authors’ interpretation of the results? | N | N | Y | N | N | N | N | N |
| 20. Was ethical approval or consent of participants attained? | Y | Y | Y | Y | Y | Y | Y | Y |

Abbreviations: N, no; Y, yes; U, unknown/unclear.

**Supplementary Figure 1.** Head-to-head comparison of TBS values between patients with active acromegaly and patients with controlled/cured disease.

Abbreviations: CI, confidence interval; N, number; SD, standard deviation; TBS, trabecular bone score.

**Supplementary Figure 2.** Comparison of BMD values between acromegalic patients and controls at lumbar spine (A), femoral neck (B) and total hip (C). Data from the study by Hong et al. [14] are reported separately by sex, as the authors did not provide the overall estimates of the outcomes in the study population as a whole.

Abbreviations: BMD, bone mineral density; CI, confidence interval; N, number; SD, standard deviation.**Appendix 1.** Electronic search strategy

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| **PUBMED** |
| *Advanced search, All fields* |
| #1 “acromegaly” AND “trabecular bone score” |
| #2 “acromegaly” AND “TBS” |

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| **EMBASE** |
| *Quick search, All fields* |
| #1 “acromegaly” AND “trabecular bone score” |
| #2 “acromegaly” AND “TBS” |

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| **COCHRANE LIBRARY** |
| *Advanced search, All text* |
| #1 “acromegaly” AND “trabecular bone score” |
| #2 “acromegaly” AND “TBS” |

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| **OVID** |
| *All resources, Multi-field search, All fields* |
| #1 “acromegaly” AND “trabecular bone score” |
| #2 “acromegaly” AND “TBS” |

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| **CINAHL** |
| *Advanced search, No field selected* |
| #1 “acromegaly” AND “trabecular bone score” |
| #2 “acromegaly” AND “TBS” |