



Authors (Ref)	Exclusion criteria
	RA
Dhakad U, et al. [48]	<ul style="list-style-type: none"> • Other autoimmune diseases, • secondary causes of osteoporosis (such as diabetes, celiac disease, and thyroid disease), • severe Vitamin D deficiency, • chronic liver disease, • chronic kidney disease stage 3 and above, • patients who were on medications that would possibly alter the BMD such as anticonvulsants were excluded from the study, • postmenopausal osteoporosis is a potential confounder.
El-Bakry S, et al. [49]	<ul style="list-style-type: none"> • Paget disease, • multiple myeloma, • breast cancer, • bone metastasis, • patients who were receiving biological treatment in the form of TNF-α inhibitors during the last 6 months were excluded from this study.
Singh A, et al. [50]	<ul style="list-style-type: none"> • Age less than 15 years, • patients on treatment of disease modifying anti rheumatic drug, • evidence of steroid use in past 1 month, • calcium supplement in last 3 months, • diabetes mellitus, • chronic kidney disease, • chronic liver disease.
Mehaney DA, et al. [51]	<ul style="list-style-type: none"> • Diabetes mellitus, • hyperthyroidism, • receiving thyroxine or calcium • replacement therapy or steroid therapy
Świerkot J, et al. [52]	<ul style="list-style-type: none"> • Pregnancy or breastfeeding, • other systemic diseases of connective tissue besides RA, • clinically significant impairment of hepatic and renal function, • alcohol abuse, • infection with hepatotropic viruses, • infections resistant to therapy, • history of cancer if no cure was achieved,

- uncontrolled diabetes,
- patient unwilling or unable to cooperate.

Seror R, et al. [53]

- Another defined inflammatory rheumatic disease
- patients had to be free of any steroids and DMARDs (except within the 15 days before inclusion for DMARDs only).

SLE

Fayed A, et al. [66]

- Any conditions that may cause glomerulopathy including diabetes and essential hypertension,
- atients with SLE with a history of lupus nephritis and who showed no evidence of activity.

Garcia-de los Ríos C,
et al. [69]

- No data.

PsA

Fassio A, et al. [74]

- Further systemic inflammatory diseases,
- active infections,
- neoplasms,
- metabolic bone diseases,
- pregnancy,
- current use of biologic therapy,
- current use of drugs known to affect bone metabolism,
- use of corticosteroids in the last 6 months.

Fassio A, et al. [75]

- Previous treatment with biologic drugs,
- other systemic inflammatory diseases,
- active infections,
- neoplasms,
- kidney, liver, endocrine or metabolic bone diseases,
- pregnancy,
- current use of biologic treatments, corticosteroids or drugs known to affect bone metabolism.

Diani M, et al. [76]

- Pregnancy,
- current or previous malignancies,
- other acute or chronic inflammatory diseases, infectious diseases (human immunodeficiency virus (HIV), hepatitis B and C, tuberculosis),
- other rheumatologic diseases,
- primary bone metabolic diseases,
- recent bone fractures (within 6 months),

	<ul style="list-style-type: none"> • anxiety, • psychosis, or depressive disorders, • supplementations, or particular diets (included fasting).
Pinto Tasende JA, et al. [77]	<ul style="list-style-type: none"> • Macroscopic or microscopic characteristics of the synovial membrane samples presented characteristics different from the underlying pathology (e.g., deposits of urate or PPCD crystals, pigmented villonodular synovitis or vasculitis).
AS	
Appel H, et al. [84]	<ul style="list-style-type: none"> • No data.
Heiland GR, et al. [85]	<ul style="list-style-type: none"> • None of the patients was treated with tumour necrosis factor (TNF) blockers.
Saad CG, et al. [86]	<ul style="list-style-type: none"> • Other diseases that may have an effect on bone metabolism such as hyperthyroidism, malabsorption syndrome, kidney and liver failure, alcohol, • prior or current use of bisphosphonates, • current glucocorticoid use (> 5 mg/day) for patients and glucocorticoid use for control group.
Klingberg E, et al. [87]	<ul style="list-style-type: none"> • Psoriasis, • inflammatory bowel disease, • dementia, • other concomitant rheumatic disease, • difficulties in understanding Swedish.
Sakellariou GT, et al. [88]	<ul style="list-style-type: none"> • Uncontrolled thyroid disease, primary or secondary hyperparathyroidism and osteoporosis, • severe liver or kidney disease (creatinine clearance <60ml/min/1.73m²), • any malignancy, • alcohol abuse, • use of glucocorticoids in the previous 6 months, • a high in take of NSAIDs according to the recently proposed.
Rossini M. et al. [89]	<ul style="list-style-type: none"> • Inflammatory bowel disease, clinical or laboratory evidence of hepatic, renal or bone metabolic diseases, • treatment with drugs known to interfere with bone or mineral metabolism, including TNF-α blockers, glucocorticoids, and bisphosphonates.
Solmaz D, et al. [90]	<ul style="list-style-type: none"> • Uncontrolled hypertension, • severe hepatic and kidney disease (creatinine clearance <60 mL/min), • severe obesity (body mass index >35 kg/m²), • malignancy,

	<ul style="list-style-type: none"> • patients receiving TNF inhibitor (TNFi).
Genre F, et al. [91]	<ul style="list-style-type: none"> • Cardiovascular events, • diabetes mellitus, • chronic kidney disease, • IBD, • psoriasis.
Luchetti MM, et al. [92]	<ul style="list-style-type: none"> • TNF inhibitors upon entry in the study and/or for ≥ 3 months before the collection of biological samples, • use of cyclooxygenase-2 inhibitors, which could induce IBD flare, was not allowed, except occasionally for the relief of pain.
Perrotta FM, et al. [93]	<ul style="list-style-type: none"> • Age ≤ 18 years, • the presence of history of bone fractures in the previous 24 months, • no treatment with bisphosphonate agents.
Gercik O, et al. [94]	<ul style="list-style-type: none"> • Age ≤ 18 years, • pregnant or lactating, • end-stage renal disease, • malignant tumor, • cirrhosis, • hyperthyroidism, • hyperparathyroidism or Cushing's syndrome, • using tumor necrosis factor inhibitors (TNFi).
Iarenenko O, et al. [95]	<ul style="list-style-type: none"> • A history of the other rheumatic diseases, • spinal surgery, • spinal tumor.
Korkosz M, et al. [96]	<ul style="list-style-type: none"> • No data.
Sun W, et al. [98]	<ul style="list-style-type: none"> • Low phosphorus rickets and osteoporosis with pathological fracture as well as malignant diseases.
Sakellariou GT, et al. [99]	<ul style="list-style-type: none"> • History of osteoporosis, • severe liver or kidney dysfunction, • history of cardiovascular disease, diabetes mellitus or metabolic syndrome, • any malignancy, • previous use of biphosphonates or other anti-osteoporotic treatment, • use of glucocorticoids in the previous 6 months,

	<ul style="list-style-type: none">• a high intake of non-steroidal anti-inflammatory drugs (NSAIDs) according to the recently proposed.
Taylan A, et al. [100]	<ul style="list-style-type: none">• History of neuroendocrine disorder (thyroid, parathyroid disorder, and anticonvulsant usage),• chronic renal and liver disease,• systemic steroid usage, menopause,• cigarette smoking,• excessive alcohol usage.
Tuylu T, et al. [101]	<ul style="list-style-type: none">• Renal impairment (serum creatinine.1.4 mg/dl),• patients who were treated with glucocorticoids during the previous four weeks.

Supplementary materials – Table 1. Summary of exclusion criteria.