booster while on tocilizumab, 7 on anakinra, and 5 on canakinumab. There was no relation between disease activity, type or duration, sex, age and outcome of vaccinations. No vaccine infection related to measles, rubella, mumps and varicella were reported.

Conclusion: This large, retrospective data collection demonstrates that live-attenuated booster vaccine is probably safe in children with rheumatic diseases, on immunosuppressive therapies. This strengthens the new PRES recommendation: "Vaccination of live-attenuated vaccines in patients on high-dose DMARD, high-dose glucocorticosteroids or biological agents can be considered on a case-by-case basis, weighing the risk of infections against the hypothetical risk of inducing infection through vaccination." These data provide the basis for a large, prospective data collection study that is planned by the PReS vaccination study group. It will increase the current level of evidence for the safety of vaccinations in our pediatric rheumatology population.

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Exercise – more than a wonderdrug

OP0206-HPR

BENEFICIAL LONG-TERM EFFECT OF A SUPERVISED EXERCISE PROGRAM ON PHYSICAL ACTIVITY LEVEL IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS: 12 MONTHS FOLLOW-UP OF A MULTICENTER RANDOMIZED CONTROLLED TRIAL

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Background: Exercise is recommended in the management of axial spondyloarthritis (axSpA)¹ as it may reduce the burden of the disease.² Despite this, patients with axSpA tend to have a low physical activity (PA) level³ and few patients engage in high intensities of exercise⁴.

Objectives: To investigate the long-term effect of a three months supervised exercise program on PA-level in patients with axSpA.

Methods: 100 patients with axSpA were randomized to either an exercise group (EG) or a no-intervention control group (CG). The exercise group participated in a three months high intensity cardiorespiratory and strength exercise program supervised by a physiotherapist. PA-level was a secondary outcome measured at 12 months follow-up with a standardised questionnaire (frequency, duration, intensity and mode)⁵. Being physically active was defined as ≥ 1 hour/week with high intensity PA. Statistical analyses were performed on an intention-to-treat basis using chi-square tests and logistic regression.

Results: A total of 87 of 100 (87%) patients were included in the analyses (table 1). At 12 months follow-up, significantly more patients in the EG than in the CG were physically active, $p < 0.001$ (figure 1). Further, significantly more patients in the EG than in the CG exercised 2-3 times per week (25 [58%] vs. 15 [34%], $p = 0.02$). Fewer patients in the EG reported to exercise at a low intensity level (low intensity reported by 3 [8%] in the EG vs. 14 [44%] in the CG, $p = 0.002$). The regression analysis showed that participating in the exercise program ($p < 0.001$) and earlier exercise experience ($p = 0.01$) were the factors most associated with being physically active at 12 months follow-up (table 2).

Table 1. Baseline descriptive of the exercise group and the control group

	Exercise group (n=43)	Control group (n=44)
Age, years, mean (min-max)	45.5 (23-68)	47.4 (24-69)
Sex, male, n (%)	22 (51%)	20 (46%)
Radiographic axSpA	32 (74%)	28 (64%)
TNF-inhibitor, n (%)	38 (44%)	20 (46%)
ASDAS, mean (SD)	2.6 (0.7)	2.5 (0.7)

ASDAS, Ankylosing Spondylitis Disease Activity Score

Conclusion: A three month supervised exercise program delivered by physiotherapists had a significant long-term beneficial effect on PA-level in patients with axSpA. As regular exercise is an important part of the treatment recommendations for patients with axSpA¹, the results indicate that a time-limited supervised exercise program may be used as an effective intervention to succeed in reaching this recommendation.

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Getting a grip on the co-morbidities in gout

OP0207

URATE-LOWERING THERAPY WITH VERINURAD AND FEBUXOSTAT REDUCES SERUM URIC ACID AND ALBUMINURIA IN HYPERURICEMIC PATIENTS WITH DIABETES

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Background: Hyperuricemia is implicated as a major risk factor for chronic kidney disease (CKD), and emerging clinical data suggest that lowering serum uric acid (sUA) may protect kidney function by reducing albuminuria and slowing the rate of CKD progression. We evaluated the efficacy and safety of an intensive sUA-lowering strategy of verinurad (RDEA3170), a novel urate transport inhibitor of URAT1, and febuxostat in patients with Type 2 diabetes mellitus (T2DM) and albuminuria (clinicaltrials.gov: NCT03118739).

Objectives: To compare the efficacy of verinurad + febuxostat to placebo in reducing albuminuria in patients with T2DM.

Methods: A Phase 2 parallel group, randomised, double-blind, placebo-controlled clinical trial. Patients were assigned 1:1 to either verinurad 9 mg + febuxostat 80 mg (n=32) or placebo (n=28). Inclusion criteria: aged ≥ 18 years, sUA concentration ≥ 6.0 mg/dL, estimated glomerular filtration rate (eGFR) ≥ 30 mL/min/1.73 m², urinary albumin-to-creatinine ratio (UACR) 30–3500 mg/g and T2DM diagnosis. Exclusion criteria: history of gout or recent treatment with urate-lowering therapy. The primary endpoint was change in UACR. Secondary endpoints included sUA, renal function biomarkers, and eGFR.

Results: Baseline characteristics were similar between groups. For treatment vs placebo, respectively, mean (SD) sUA was 7.5 (1.6) vs 7.0 (0.8) mg/dL, eGFR was 59.2 (25.3) vs 68.1 (23.2) mL/min/1.73 m², and UACR was 459 (825) vs 412 (548) mg/g at baseline. The study met the primary endpoint as verinurad/febuxostat reduced UACR by 39% vs placebo after 12 weeks of treatment ($p = 0.07$,

predetermined $\alpha=0.1$). Least squares (LS) mean% change in eGFR at 24 weeks from baseline was

-1.73% for verinurad/febuxostat vs +0.55% for placebo ($p=0.71$). LS mean% change in sUA was -57% in the verinurad/febuxostat vs an increase of 7% in the placebo group at 12 weeks ($p<0.0001$). This effect was sustained at 24 weeks (62% reduction with verinurad/febuxostat vs 5% increase with placebo; $p<0.0001$). Excluding patients with prior gout avoided the need to administer gout prophylaxis, and only one gout flare-up (3%) was reported in the verinurad/febuxostat group. Most adverse events (AEs) observed were mild to moderate. AEs reported in more than one patient on active treatment were diarrhoea, dizziness, and nasopharyngitis.

Conclusion: Treatment with verinurad + febuxostat significantly reduced hyperuricemia and albuminuria in patients with T2DM. The effect was rapid, and the improvement was sustained through Week 24, suggesting that an intensive urate-lowering strategy that combines a URAT1 inhibitor with a xanthine oxidoreductase inhibitor may protect against the progression of diabetic kidney disease. Further studies are planned to confirm the efficacy of a verinurad-led urate-lowering strategy in preventing CKD progression.

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OP0208

EFFECT OF SERUM URATE LOWERING WITH ALLOPURINOL ON BLOOD PRESSURE IN YOUNG ADULTS

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Background: The association between serum urate and hypertension continues to be controversial. Animal models and studies in adolescents provided strong support of urate-lowering therapy (ULT) efficacy to improve early hypertension (1), while one recent randomized-controlled study in adults failed to find benefit (2).

Objectives: To test the hypothesis that serum urate reduction with allopurinol would lead to blood pressure reductions in young adults with pre-hypertension.

Methods: Single center, double-blinded, crossover trial in which participants were randomly assigned to allopurinol (300 daily mg) or placebo for a period of one month each. Adults ages 18-40, with baseline systolic blood pressure (SBP) ≥ 120 and < 160 mm Hg or diastolic blood pressure ≥ 80 and < 100 mm Hg, and serum urate ≥ 5.0 mg/dL (>297.4 $\mu\text{mol/L}$) or ≥ 4.0 mg/dL (237.9 $\mu\text{mol/L}$) (men or women, respectively) were enrolled. Main exclusion criteria included chronic kidney disease, gout, or use of ULTs. The primary outcome was change from baseline in SBP assessed by 24 hour ambulatory blood pressure monitoring. Safety assessments were also conducted.

Results: 99 participants were randomized, and 82 completed study participation (Table 1). Serum urate decreased by -1.33 ± 1.21 mg/dL (-79.1 ± 72.0 $\mu\text{mol/L}$) during the allopurinol period ($p<0.001$) and by a non-significant -0.04 ± 0.75 mg/dL (2.4 ± 44.6 $\mu\text{mol/L}$) while taking placebo. SBP changed by -0.71 ± 8.21 mmHg during the period assigned to allopurinol versus -0.16 ± 7.33 mmHg during the period assigned to placebo. The difference between these changes in SBP was not significant ($p=0.52$) (Table 2). Changes in diastolic blood pressure and mean ambulatory blood pressure also were not significantly different during allopurinol and placebo exposure periods. In post hoc analyses, there was a trend towards significant blood pressure decreases in the small participant subgroup with serum urate of > 6.5 mg/dL (> 386.7 $\mu\text{mol/L}$) at baseline visit. No allopurinol hypersensitivity events or other serious adverse events were observed.

Conclusion: In the intention-to-treat analysis, urate-lowering therapy with allopurinol in young adults did not lead to reductions in blood pressure when compared with placebo. Blood pressure reductions with allopurinol may be limited only to participants with higher baseline serum urate levels.

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Table 1. Baseline characteristics of participants (n =99)

	Mean or frequency
Age (years)	28.0 $\pm$ 7.0
Sex	62 (63%)
Men	37 (37%)
Women	
Race/Ethnicity	40 (40%)
African American	59 (60%)
Not African American	
Serum urate	6.4 $\pm$ 1.0 mg/dL (380.7 $\pm$ 59.5 $\mu\text{mol/L}$)
Men	4.9 $\pm$ 0.7 mg/dL (291.5 $\pm$ 41.6 $\mu\text{mol/L}$)
Women	
Blood pressure at screening	133.8 $\pm$ 10.0
Mean systolic (mmHg)	84.3 $\pm$ 8.8
Mean diastolic (mmHg)	

Table 2. Change in blood pressure parameters during allopurinol and placebo treatment phases (n=99). Mean (SD)

Outcomes (mmHg)	Placebo	Allopurinol	p
Systolic blood pressure	-0.16 (7.33)	-0.71 (8.21)	0.52
Diastolic blood pressure	-0.22 (5.81)	-0.28 (6.58)	0.68
Mean arterial pressure	-0.43 (5.63)	-0.54 (6.86)	0.54

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Treatment is more than drugs

OP0209-PARE IMPROVING MENTAL WELLBEING - COACHING PEERS TO USE TOOLKIT FOR MIND

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Background: The theme for the Finnish Rheumatism Association for 2019 is Mind and Me. The Age Institute in Finland launched a project called Mental Wellbeing to Promote Older People's Knowhow to Face Life's Challenges and the project was piloted at the Finnish Rheumatism Association in 2018. During the pilot project, staff members from the Finnish Rheumatism Association and volunteers from its member organisations were trained as Tools for Mind Coaches. This training gave new tools for peer support targeting older people and their mental wellbeing. The Coaches may use the tools developed by the Age Institute, and these include Mind Tools, Senior Mind Pack of 52 cards, Nature Attraction Path, A Guide for Life Skills Coaches and a pocket book on Mental Wellbeing. The project especially targeted older people and their families in challenging life situations by promoting their mental wellbeing.

Objectives: To disseminate the theme and activities of mental wellbeing in member associations. To utilise the trained mental wellbeing coaches for tutoring in older people groups. To utilise the Tools for Mind in the activities of the Finnish Rheumatism Association and its member associations. To promote mental wellbeing to members

Methods: In the pilot project in 2018 the Age Institute organized three mental wellbeing training sessions for peer support group coaches, each lasted 1-2 days. The Finnish Rheumatism Association provided the coaches with some of the Tools for Mind. The training sessions included theory and practices. Participants were introduced how to use the Tools for Mind and they were encouraged to think for other applications of the tools. Also the themes discussed included elements of mental wellbeing, solution-focused approach, organising peer support groups for old people with chronic illnesses and ethical principles for group activities.

Results: There were altogether 11 people from the Finnish Rheumatism Association and its member associations that finished the training for Mind Coaches. Feedback from the participants was positive and the Tools for Mind were not only considered as useful practical tools but they also increased self-confidence and enthusiasm for peer led support groups. Senior Mind Pack of 52 cards were described as multipurpose and having good visual quality. All Tools for Mind were considered as thought-provoking tools to start conversation. Practical tools help