

# Nandrolone Decanoate Improves Joint Pain in Men Within 8 Weeks: A Novel Prospective Pilot Study

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## Introduction

- 5-20% of adult men suffer from hypogonadism (HG).
- Comorbidities linked with HG, such as diabetes and obesity, are often associated with significant and debilitating joint pain (JP).
- Nandrolone decanoate (ND) is an FDA approved testosterone derivative for treatment of anemia and muscle-wasting syndrome that has anecdotally been linked to reduced JP.
- Here we quantify this effect prospectively in a novel pilot study.

## Aim

- To assess and characterize the degree of joint pain improvement seen with the use of nandrolone decanoate.

## Methods

- Hypogonadal men taking injectable testosterone therapy (TTh) presenting to a single andrology clinic between July 2018 and October 2018 were evaluated for the presence of JP.
- Men who reported significant JP and denied prior ND usage were invited to take part in the study.
- Study participants completed the Rheumatoid Arthritis Pain Scale (RAPS) (Table 1), a validated questionnaire initially developed to assess/characterize pain levels in adults with rheumatoid arthritis.

## Methods (cont'd)

- The RAPS contains 24 statements about JP to which patients assign a value ranging from 0 (never) to 6 (always).
- Pain scores are totaled with higher scores representing worse pain and can then be divided into physiologic, affective, sensory-discriminative, and cognitive components.
- Men were asked to complete the RAPS questionnaire prior to starting ND. Patient specific characteristics were recorded, including pain location and pain medication use/dosages.
- Men subsequently started injectable ND at half the dosage of their current testosterone regimen with all other medications kept constant. After 8 weeks of treatment, study participants once again completed the survey.

## Table 1: The Rheumatoid Arthritis Pain Scale

DIRECTIONS: The following items relate to pain and arthritis. For each item, choose one number from 0 (never) to 6 (always) to describe how you have felt in the last week.

- |   |  |
|---|--|
| 1. I would describe my pain as gnawing.                                       | 12. I cannot decrease my pain by using methods other than taking extra medication. |
| 2. I would describe my pain as aching.  | 13. I would describe my pain as burning.   |
| 3. I would use the word exhausting to describe my pain.                       | 14. I find that I guard my joints to reduce pain.                                  |
| 4. I would describe my pain as annoying.                                      | 15. I brace myself because of the pain.  |
| 5. I am in constant pain.   | 16. My pain is throbbing in nature.  |
| 6. I would describe my pain as rhythmic.                                      | 17. I would describe my pain as sharp.   |
| 7. I have swelling of at least one joint.                                     | 18. I would say my pain is severe.   |
| 8. I have morning stiffness of one hour or more.                              | 19. I feel stiffness in my joints after rest.                                      |
| 9. I have pain on motion of at least one joint.                               | 20. My joints feel hot.  |
| 10. I cannot perform all the everyday tasks I normally would because of pain. | 21. I feel anxious because of pain.  |
| 11. Pain interferes with my sleep.  | 22. I would describe my pain as tingling.  |
|   | 23. I feel my pain is uncontrollable.  |
|   | 24. I feel helpless to control my pain.  |

Table 2: Mean Rheumatoid Arthritis Pain Scale Scores (n=18)

	Before Treatment	After Treatment	P Value
Physiologic	12.8	6.1	0.01*
Affective	14.2	7.4	0.002*
Sensory-Discriminative	23.0	11.8	0.001*
Cognitive	15.2	5.7	<0.001*
Total	65.2	31.1	<0.001*

## Results

- 48 eligible patients completed the initial survey and 18 men (37.5%) responded to follow-up requests at the time of this review.
- Mean duration of therapy was 63 days.
- All patients reported marked improvements in JP with 5 (27.8%) reporting a decreased need for pain medication.
- Patients' total pain scores decreased from an average of 65.2 to 31.1 (p<0.001). Significant improvements in each sub-category were noted (Table 2). No adverse events were reported.

## Conclusion

- ND is a promising new adjunctive therapy for hypogonadal men with JP. It reduced pain scores by an average of 52% and decreased pain medication requirements in 27.8% of patients.
- Reducing pain medication needs is paramount in today's opioid crisis climate. Further studies are required to better characterize ND's effects across a larger study population and understand its efficacy.

The nandrolone decanoate used in this study was manufactured by Empower Pharmacy, a 503b compounding pharmacy based in Houston, TX.