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Trends in patient physical activity before and after primary THA

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INTRODUCTION: Total hip arthroplasties (THA) are performed to reduce pain and enhance patients' function and physical activity (PA) level. PA is also recognized as the most important patient-related factor determining implant survival. Furthermore, unrealistic patient expectations regarding PA after surgery have been identified as one of the reasons for increased dissatisfaction. Detailed assessment of PA before and after THA is lacking.

OBJECTIVES: Our objective was to evaluate (1) how patient's PA level evolves: prior to disease onset, prior to THA, and at 5 and 10 years postoperative, and (2) whether PA level before and after THA has changed over the last decade across birth cohorts of identical age.

METHODS: Patients included in this study are part of a prospective hospital-based cohort of all THAs operated upon in a large University hospital and followed longitudinally since 1996. We included all primary THAs between 1/2000 and 4/2012. PA was assessed by the physician and self-reported, preoperatively and at 5 and 10 years postoperative. Moreover, PA was evaluated with the UCLA activity scale. To determine PA evolution over the course of OA and THA, cross-sectional analyses were performed to assess mean UCLA scores over four periods: prior to disease, prior to surgery, 5- and 10-years postoperative independently of the year of surgery. Separate analyses were performed for men and women and by age categories (<55, 55-64, 65-74, 75 yrs. at operation). To analyze secular trends in PA, cross-sectional analyses were performed at three time periods within identical age categories (2000-2003, 2004-2007, 2008-2011).

RESULTS: Overall, lifestyle was assessed preoperatively for 2916 THAs and postoperatively for 1565 THAs. The UCLA score was assessed preoperatively for 155 THAs and at follow-up for 1345 THAs. Mean age at operation was 68.4 years, 56% were women.

Prior to surgery 61% of patients reported a sedentary lifestyle compared to 45% at 5 years postoperative (Risk difference (RD) 16%, 95% CI 12; 20). The proportion of patients with a sedentary lifestyle prior to surgery decreased from 68% in 2000-2003 to 54% in 2007-2011 (RD 14%, 95% CI 9; 18) despite a similar mean age. Sedentary lifestyle 5 years after surgery was reported by 53% of those operated 2000-2003 compared to 39% of those operated 2004-2007 (RD 14%, 95% CI 9; 20).

The mean UCLA scores prior to OA onset, prior to THA and 5 and 10 years postoperative were respectively in men 7.8, 3.7, 6.2 and 6.2 and in women 6.2, 3.2, 5.1 and 4.8.

Prior to surgery UCLA scores were similar across age categories ranging from 3.7 in the youngest to 3.2 in the eldest group ($p=0.8$). Five years postoperative UCLA scores declined as age increased. Across the four age categories the mean UCLA scores were respectively 6.7, 6.4, 5.6 and 4.2 ($p<0.0001$). Ten years postoperative mean UCLA scores were 6.4, 6.4, 5.2 and 3.8, respectively ($p<0.0001$).

CONCLUSION: Primary THA substantially and durably improved PA levels in men and women and in all age categories. Activity levels were lower in women than in men at all times. In the last decade the proportion of patients with an active lifestyle before and after THA increased by 14%.

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