

Generalized Joint Hypermobility – Diagnosis and Physiotherapy

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Generalized Joint Hypermobility

Generalized joint hypermobility (GJH) is diagnosed when an increased mobility of small and large joints is noticed [1,2]. There are many definitions of increased joint mobility in literature such as generalized joint hypermobility, joint laxity, joint hypermobility, joint hypermobility syndrome (JHS), benign hypermobility syndrome or benign joint hypermobility syndrome [3-5]. Variety of definitions causes difficulties in planning correct diagnostics and therapeutic treatment [6].

GJH is generally an asymptomatic increase of joint mobility compared to its symptomatic equivalent - joint hypermobility syndrome [3]. The frequency of generalized joint hypermobility is assessed between 10 and 20% and is more common in girls and young children [3]. Most of the papers concentrate on JHS and only few refer to generalized joint hypermobility [3,5,7]. Though JHS and GJH are two different phenomenon the nature of change in joint mobility is similar and the difference is joint pain occurring in JHS. Therefore, it seems reasonable applying physiotherapeutic recommendations concerning JHS for subjects with GJH.

Individuals with GJH and JHS are more prone to back and peripheral joints pain as well as postural disorders, especially lordotic posture, sway-back posture and functional scoliosis [1,4]. Disturbed proprioception results in difficulties in the self-assessment of the angular joint position and can lead to repetitive joint injuries and joint instability [1,4,7].

To assess GJH most commonly used in clinical screening is nine-point Beighton scale consisting of: (1) passive flexion of fifth digit beyond 90°; (2) passive thumb abduction to front forearm; (3) passive hyperextension of elbow joint above 10°; (4) passive hyperextension of knee joint above 10°; (5) forward flexion of the trunk in standing so that the palms of the hand are flat on the ground [3,8]. Each hypermobile joint gets one point. The proposed cut-off value is 5 or more points for girls and 4 or more points for boys [9]. The Beighton scale is related with high inter-rater (ICC=0.96-0.98) and good inter-rater reliability (ICC=0.73 [10]). Other methods for diagnosis GJH may be Carter and Wilkinson scale or Marshall test [1,3,4,11]. In epidemiological studies the Hakim and Grahame questionnaire is also recommended [1,3,12]. Its sensitivity and specificity is evaluated on the level 85% and 90%, respectively [12].

Physiotherapy is a basis for the treatment of musculoskeletal consequences of joint hypermobility. The aim of therapy for subjects with GJH should include: (1) improving core stability; (2) improving the activity of muscles responsible for joint stabilization; (3) inhibition of hyperactive muscles; (4) improving proprioception and balance; (5) education about ergonomic patterns concerning the avoidance of resting in harmful end-of-range postures; (6) raising the awareness regarding postural self-control and active self-correction; (7)

improving physical fitness [1,6,7,13]. Stretching exercises are not recommended [13]. What more interesting, the tests used commonly in the physiotherapy in order to evaluate the flexibility of pelvic-hip complex and trunk flexibility e.g. straight leg raise test, popliteal angle test, modified Thomas test or fingertip-to-floor test do not allow to recognize the GJH in children. This may lead to improper planning of the exercises [14]. Therefore, the specific for GJH tests (e.g. Beighton score) should be a standard part of physiotherapeutic examination of the musculoskeletal system.

Conclusion

1. The generalized joint hypermobility is a common phenomenon in children and adolescents.
2. In children and adolescents with GJH the postural disorders are commonly recognized.
3. The examination of the musculoskeletal system based only on tests aimed at evaluation of pelvic-hip complex and trunk flexibility is not sufficient to recognize GJH.
4. As the GJH consider a specific physiotherapy, the assessment of joint mobility with using specific for GJH tests should be a constant element of physiotherapeutic functional diagnosis of children and adolescents.

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