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Characterization of Dysbiotic Changes of Skin Microbiota in Contact Sports Athletes

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Abstract

© 2017, Springer Science+Business Media New York.Contact sports athletes often suffer from various skin disorders (inflammatory diseases of bacterial and fungal origin, atopic dermatitis, psoriasis, etc.) resulting in long breaks in training which ruin athletic performance. Wrestling implies intense skin-to-skin contact that creates perfect conditions for transmission of the infectious agents. Following the standard rules of hygiene (showering and handwashing directly after each competition and training) does not exclude the possibility to get an infection from sparring partner. To characterize the skin microbial composition of wrestlers who do not have current manifestation of any skin disorders, the metagenomic analysis was performed. Absolute predominance of Bacillus genus in metagenomic profiles of wrestlers' skin was observed in contrast with the existing literature data. Classic microbiological approaches allowed to detect hemolytic forms of microorganisms. Wrestlers' skin appeared to be colonized with hemolytic bacilli, whereas the non-wrestler athletes did not have such bacteria on their skin. Such dysbiotic shifts in the microbial community may cause the emergence of skin diseases. Revealed properties could help to design highly effective antiseptics for the contact sports hygiene.

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Keywords

Bacillus, Contact sport, Dysbiosis, Skin microbiota, Wrestlers

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