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Improving type-2 diabetes through HIIT (high intensity interval training) and lifestyle coached modifications

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Background: Diabetes costs the NHS over £ 1.5 m an hour, estimated 10% of the NHS budget. Type-2 Diabetes alone cost £ 0.7 billion in 2012 alone. Lifestyle modification is one of the commonest methods used alongside medication or alone in some patients to improve the HBA1C for patients with diabetes through increasing insulin sensitivity because of reducing body adiposity. Is directed lifestyle modifications and the type of exercise we ask patients to do relevant or do we just ask patients to exercise more and eat less? This is the question we wanted to answer.

Methodology: Two groups of 50 patients each were identified with type-2 diabetes. Group-1 was allocated an online personal trainer who gave directed instructions on HIIT (High intensity interval training) and a diet plan to follow. Group-2 was given generic advice on doing 30 mins exercise 5 times a week and instructed to follow a Mediterranean diet. This took place over 6 months.

Finding: Group-1 showed a statistically significant improvement in HBA1C to Group-2. Group 1 improved their HBA1c by an average of 20%, compared to 5% in Group-2. 15% of group-1 managed to reverse their type-2 diabetes.

Conclusion & Significance: Exercise and lifestyle modifications are increasingly recognizing as important in good overall health, specially in people with insulin resistance as in those with type-2 diabetes. Directed HIIT with supportive diet plans and regular reviews can both improve overall HBA1C and general health and should become an integral part of diabetic care.

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Methicillin-resistant Staphylococcus aureus carriage in healthcare workers; at King Faisal Specialist Hospital and Research Center in Riyadh, Saudi Arabia

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Introduction: Methicillin-resistant *Staphylococcus Aureus* (MRSA) infection has limited data available regarding its colonization among health-care workers (HCW) and its implication as a potential source for spread to patients and colleagues. An investigation was undertaken to determine the extent of nasal colonization among HCWs in a large tertiary care hospital in Riyadh, Saudi Arabia.

Objective: To identify rates and risk factors for MRSA nasal colonization amongst inpatient and outpatient HCWs with an occupation known to have direct or close contact with patients.

Method: The total number of HCWs at KFSH and RC-Riyadh is approximately 5100. Of these, 206 (4.0%) HCWs were nasally screened for MRSA (100 nurses, 43 physicians, 43 support staff). The HCWs were randomly-selected. The study was approved by the Office of Research Affairs (RAC) and Ethics Committee. Written consent was obtained from each participant. MRSA screening and analysis was performed using PCR for nasal swabs. Incidental findings of clusters were analyzed using pulse field gel electrophoresis (PFGE).

Result: Study participants represented 24 differing nationalities/countries of origin with an age range of 23 to 65 years. Of the 206 HCWs screened, 19 (9.2%) were identified positive for MRSA nasal colonization. 13 (68%) nurses were positive, 2 (10.5%) were physicians and 4 (21%) were support staff.

Conclusion: High positivity rate has outlined the clear risk the HCWs pose in MRSA transmission. Nurses, physicians and support staff are all implicated for MRSA colonization. Screening and providing education on infection prevention and control should be strongly considered for HCWs in healthcare settings.

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