

# Quick wins: the short-term benefits of stopping smoking

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## Summary

This briefing summarises evidence on the benefits of smoking cessation, focusing on gains within the first year of stopping smoking.

- The largest health gain in the first year is a 50% reduction in excess risk of fatal and non-fatal heart attack in those who are 35+ years old. This represents 14 premature deaths prevented for every 1,000 middle aged or older smokers who stop
- For those suffering from chronic obstructive pulmonary disease (COPD) there are fewer hospital admissions and deaths because of a reduction in acute episodes known as 'exacerbations'
- Within three months there is improvement in overall lung function in people with mild to moderate COPD
- Erectile dysfunction reduces within one month
- There is a reduction in periodontal disease within one year
- In smokers undergoing surgery, wound healing is improved and risk of post-operative complications reduced
- In pregnant smokers, risk of low birth weight reduces, and risk of pre-term birth, spontaneous abortion, maternal and perinatal death decreases
- Facial appearance (pallor and wrinkles) improves within one month
- Improved sense of taste and smell occurs within 12 months
- Overall life satisfaction increases within one year
- Anxiety and depression levels decrease within three to six months
- Ex-smokers save an average of £1,300 in the first year on the cost of cigarettes

## Quick wins: the short-term benefits of stopping smoking

### 1. Background

Stopping smoking improves healthy life expectancy by an average of six hours for each day of smoking prevented after early middle age,<sup>1</sup> up to approximately 10 years in both men and women if they stop smoking in their 30s.

For most smokers this benefit does not accrue until later in life. Many smokers and public bodies for whom smoking represents a financial cost are interested in knowing what benefits can be expected much sooner than that. This briefing summarises evidence on benefits that can be expected within the first year of stopping.

### 2. Methods

Electronic research databases (PubMed, Web of Science and Google Scholar) were reviewed using the terms "benefit", "advantage", "improvement", "amelioration" or "gain" and the terms "short-term", "immediate", "acute", "rapid", "instant" or "quick" in addition to terms for smoking cessation. Where existing reviews were found these were used. Otherwise, primary research findings were analysed and summarised.

### 3. Results

#### Physical health

Table 1 shows the expected physical health benefits from stopping smoking. The most notable benefits are improved lung functioning (including a decrease in COPD symptoms), lower heart rate, decrease in risk to the babies of smokers and faster wound healing.

Quick wins: the short-term benefits of stopping smoking

Table 1: Expected physical health benefits within 12 months of smoking cessation

Time since quit	System				
	Respiratory	Vascular*	Re-productive	Gastro-intestinal	General
<1 months	Improvement in pulmonary CO diffusing capacity <sup>2,3</sup> and pulmonary epithelial permeability <sup>4</sup>	Improvement in coronary vaso-constriction, lipid and fibrinolytic profile and oxidative injury <sup>5-7</sup>	Improvement in hemodynamics, rigidity and tumescence in men with erectile dysfunction <sup>8,9</sup>	Reduction in daily gastro-esophageal reflux, <sup>10</sup> faster gastric ulcer healing <sup>11</sup>	
<2 months	Improvement in FEV1, decreased sputum neutrophils in asthmatics <sup>12</sup>	Lowered arterial pressure and heart rate <sup>13, 14</sup>			Reduced post-operative complications and improved wound healing <sup>15, 16</sup>
<3 months	Decrease in COPD/respiratory disease symptoms (wheeziness, expectoration, cough) and reduced severity <sup>17-19</sup>		Possible improvement in sperm quality <sup>20</sup>		
<4 months	Improved airway hyper-activity and respiratory symptoms in asthmatics <sup>21</sup>				
<6 months		Improved airway hyper-activity and respiratory symptoms in asthmatics <sup>21</sup>	Excess risk of low birth weight and associated complications eliminated <sup>23-25</sup>	Faster healing of duodenal ulcers, <sup>26</sup> reduced recurrence of gastric ulcer <sup>27</sup>	
<9 months			Perinatal death and preterm delivery likely to be reduced <sup>11</sup>		
<12 months	Improved FEV1 and reduced airway inflammation in healthy smokers or smokers with mild COPD; <sup>28-30</sup> improved airway hyper-reactivity and decreased epithelial remodelling in COPD patients <sup>30, 31</sup>	Decreased risk of primary as well as secondary CHD <sup>11, 32, 33</sup> including MI; <sup>34, 35</sup> improved survival following surgery for PAD <sup>11</sup>		Reduction in duodenal ulcer relapse and Crohn's disease flare-up <sup>36, 37</sup>	Improved olfaction <sup>38</sup>

Table 1: Rapid health gains from stopping smoking; \*Generally, most pronounced benefits are seen in those with pre-existing conditions; CO: carbon monoxide, COPD: Chronic obstructive pulmonary disease, FEV1: Forced-expiratory volume in one second; CHD: Coronary heart disease, PAD: Peripheral arterial disease

## Quick wins: the short-term benefits of stopping smoking

### Wellbeing

Below, a number of other positive effects of smoking cessation that occur within a relatively short amount of time are presented. These include healthier appearance of the skin and improvement of bad breath; also increased self-confidence, more social interaction and greater engagement in other healthy behaviours.

### Aesthetic improvements

- Smoking is associated with a number of oral conditions such as bad breath, stained teeth and periodontal disease and these tend to be quickly reversible in the early stages after smoking cessation<sup>39, 40</sup>
- Smoking also has dermatological consequences, and there are a number of rapid improvements following smoking cessation, such as a reduction in the recurrence of psoriasis, palmoplantar pustulosis and skin ulcers<sup>41</sup>
- Smoking cessation also improves the appearance of skin and nails in the absence of nicotine staining and a halting in the aging of skin and formation of wrinkles which is enhanced in smokers<sup>42</sup>

### Psychosocial improvements

- There is evidence that smoking cessation is not only a consequence of higher self-confidence (or self-efficacy) but that smoking cessation itself causes improvements in both these cognitions within a short timeframe<sup>11, 43–45</sup>
- Studies increasingly suggest that as former smokers play an active role in structuring social interactions and support, so as to maintain abstinence and remain at the centre of social networks, continuing smokers become pushed to the periphery and socially isolated<sup>11, 46</sup>

### Improvements in other health behaviours

- Smoking cessation appears to go hand in hand with fairly rapid improvements and orientation towards other healthy life choices including increases in exercise, healthy dieting, reduction in alcohol consumption and taking part in health screening programs<sup>11, 47–51</sup>

## Quick wins: the short-term benefits of stopping smoking

### Mental health

There is increasing evidence that stopping smoking yields improvement in psychological well-being and that this occurs relatively soon after the quit date. Whilst low mood, anxiety and feeling generally unwell are common withdrawal symptoms, they are relatively short-lived.<sup>52</sup> In fact, within a year of stopping smoking, ex-smokers' life enjoyment and satisfaction levels start to increase towards the levels of a never smoker.<sup>53</sup> Moreover, the majority of recent ex-smokers report feeling happier than when they were a smoker.<sup>54</sup>

In terms of mental illness, there is also good evidence that the benefits from smoking cessation are experienced relatively rapidly. Anxiety levels can start to decrease from one week after quitting<sup>55</sup> and this is maintained at six months, leading to a reduction in the prevalence of anxiety disorders among ex-smokers.<sup>56</sup>

The prevalence of anxiety and depression decreases within 12 months of stopping smoking in the general population and is not associated with any an worsening of symptoms following smoking cessation among those with a history of mental health problems.<sup>57–59</sup>

### Financial gains

Stopping smoking results in obvious financial gains. Recent data from the UK show that on average smokers spent £5.45 for 20 hand-rolled cigarettes and £6.06 for 20 manufactured cigarettes.<sup>60</sup> Given that the latest figures show that smokers on average consume 12.4 cigarettes a day,<sup>61</sup> this means a weekly spend on cigarettes of £23.7 for hand-rolled and £26.3 for manufactured cigarette smokers, or £1,232.40 and £1,367.60 per year; equivalent to 5.2% of the average UK household spend.<sup>62</sup>

### Conclusion

There are many immediate benefits or “quick gains” from stopping smoking: ranging from improvements in physical and mental health, general well-being and appearance, plus substantial financial savings.

Making those struggling to quit aware of these acute and rapid positive effects of smoking cessation, and asking them to self-monitor to observe these improvements for themselves, may strengthen their motivation to remain abstinent and provide further reasons to stick with a quit attempt.

## Quick wins: the short-term benefits of stopping smoking

### References

1. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* 2004 Jun 26;328(7455):1519–28.
2. Sansores RH, Pare P, Abboud RT. Effect of smoking cessation on pulmonary carbon monoxide diffusing capacity and capillary blood volume. *Am Rev Respir Dis* 1992 Oct;146(4):959–64.
3. Knudson RJ, Kaltenborn WT, Burrows B. The effects of cigarette smoking and smoking cessation on the carbon monoxide diffusing capacity of the lung in asymptomatic subjects. *Am Rev Respir Dis* 1989 Sep;140(3):645–51.
4. Minty BD, Jordan C, Jones JG. Rapid improvement in abnormal pulmonary epithelial permeability after stopping cigarettes. *Br Med J (Clin Res Ed)* 1981 Apr 11;282(6271):1183–6.
5. Gourlay SG, Benowitz NL. The benefits of stopping smoking and the role of nicotine replacement therapy in older patients. *Drugs Aging* 1996 Jul;9(1):8–23.
6. Minami J, Todoroki M, Yoshii M, Mita S, Nishikimi T, Ishimitsu T, et al. Effects of smoking cessation or alcohol restriction on metabolic and fibrinolytic variables in Japanese men. *Clin Sci (Lond)* 2002 Aug;103(2):117–22.
7. Pilz H, Oguogho A, Chehne F, Lupattelli G, Palumbo B, Sinzinger H. Quitting cigarette smoking results in a fast improvement of in vivo oxidation injury (determined via plasma, serum and urinary isoprostane). *Thromb Res* 2000 Aug 1;99(3):209–21.
8. Sighinolfi MC, Mofferdin A, De SS, Micali S, Cicero AF, Bianchi G. Immediate improvement in penile hemodynamics after cessation of smoking: previous results. *Urology* 2007 Jan;69(1):163–5.
9. Guay AT, Perez JB, Heatley GJ. Cessation of smoking rapidly decreases erectile dysfunction. *Endocr Pract* 1998 Jan;4(1):23–6.
10. Waring JP, Eastwood TF, Austin JM, Sanowski RA. The immediate effects of cessation of cigarette smoking on gastroesophageal reflux. *Am J Gastroenterol* 1989 Sep;84(9):1076–8.
11. USDHHS. The health benefits of smoking cessation: a report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services (USDHHS); 1990.
12. Chaudhuri R, Livingston E, McMahon AD, Lafferty J, Fraser I, Spears M, et al. Effects of smoking cessation on lung function and airway inflammation in smokers with asthma. *Am J Respir Crit Care Med* 2006 Jul 15;174(2):127–33.
13. Minami J, Ishimitsu T, Matsuoka H. Effects of smoking cessation on blood pressure and heart rate variability in habitual smokers. *Hypertension* 1999 Jan;33(1 Pt 2):586–90.
14. Oren S, Isakov I, Goltzman B, Kogan J, Turkot S, Peled R, et al. The influence of smoking cessation on hemodynamics and arterial compliance. *Angiology* 2006 Oct;57(5):564–8.
15. Moller AM, Villebro N, Pedersen T, Tonnesen H. Effect of preoperative smoking intervention on postoperative complications: a randomised clinical trial. *Lancet* 2002 Jan 12;359(9301):114–7.
16. Wong J, Lam DP, Abrishami A, Chan MT, Chung F. Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis. *Can J Anaesth* 2012 Mar;59(3):268–79.
17. Etter JF. Short-term change in self-reported COPD symptoms after smoking cessation in an internet sample. *Eur Respir J* 2010 Jun;35(6):1249–55.
18. Eagan TM, Gulsvik A, Eide GE, Bakke PS. Remission of respiratory symptoms by smoking and occupational exposure in a cohort study. *Eur Respir J* 2004 Apr;23(4):589–94.
19. Stein MD, Weinstock MC, Herman DS, Anderson BJ. Respiratory symptom relief related to reduction in cigarette use. *J Gen Intern Med* 2005 Oct;20(10):889–94.
20. Santos EP, Lopez-Costa S, Chenlo P, Pugliese MN, Curi S, Ariagno J, et al. Impact of spontaneous smoking cessation on sperm quality: case report. *Andrologia* 2011 Dec;43(6):431–5.

## Quick wins: the short-term benefits of stopping smoking

21. Tonnesen P, Pisinger C, Hvidberg S, Wennike P, Bremann L, Westin A, et al. Effects of smoking cessation and reduction in asthmatics. *Nicotine Tob Res* 2005 Feb;7(1):139–48.
22. Hosokawa S, Hiasa Y, Miyazaki S, Ogura R, Miyajima H, Ohara Y, et al. Effects of smoking cessation on coronary endothelial function in patients with recent myocardial infarction. *Int J Cardiol* 2008 Aug 1;128(1):48–52.
23. McDonald AD, Armstrong BG, Sloan M. Cigarette, alcohol, and coffee consumption and prematurity. *Am J Public Health* 1992 Jan;82(1):87–90.
24. Kramer MS. Determinants of low birth weight: methodological assessment and meta-analysis. *Bull World Health Organ* 1987;65(5):663–737.
25. Lieberman E, Gremy I, Lang JM, Cohen AP. Low birthweight at term and the timing of fetal exposure to maternal smoking. *Am J Public Health* 1994 Jul;84(7):1127–31.
26. Hull DH, Beale PJ. Cigarette smoking and duodenal ulcer. *Gut* 1985 Dec;26(12):1333–7.
27. Tatsuta M, Iishi H, Okuda S. Effects of cigarette smoking on the location, healing and recurrence of gastric ulcers. *Hepatogastroenterology* 1987 Oct;34(5):223–8.
28. Scanlon PD, Connett JE, Waller LA, Altose MD, Bailey WC, Buist AS. Smoking cessation and lung function in mild-to-moderate chronic obstructive pulmonary disease. The Lung Health Study. *Am J Respir Crit Care Med* 2000 Feb;161(2 Pt 1):381–90.
29. Wise RA, Kanner RE, Lindgren P, Connett JE, Altose MD, Enright PL, et al. The effect of smoking intervention and an inhaled bronchodilator on airways reactivity in COPD: the Lung Health Study. *Chest* 2003 Aug;124(2):449–58.
30. Willemse BW, ten Hacken NH, Rutgers B, Lesman-Leegte IG, Postma DS, Timens W. Effect of 1-year smoking cessation on airway inflammation in COPD and asymptomatic smokers. *Eur Respir J* 2005 Nov;26(5):835–45.
31. Lapperre TS, Sont JK, van SA, Gosman MM, Postma DS, Bajema IM, et al. Smoking cessation and bronchial epithelial remodelling in COPD: a cross-sectional study. *Respir Res* 2007;8:85.
32. Twardella D, Kupper-Nybelen J, Rothenbacher D, Hahmann H, Wusten B, Brenner H. Short-term benefit of smoking cessation in patients with coronary heart disease: estimates based on self-reported smoking data and serum cotinine measurements. *Eur Heart J* 2004 Dec;25(23):2101–8.
33. Ockene JK, Kuller LH, Svendsen KH, Meilahn E. The relationship of smoking cessation to coronary heart disease and lung cancer in the Multiple Risk Factor Intervention Trial (MRFIT). *Am J Public Health* 1990 Aug;80(8):954–8.
34. Rosenberg L, Palmer JR, Shapiro S. Decline in the risk of myocardial infarction among women who stop smoking. *N Engl J Med* 1990 Jan 25;322(4):213–7.
35. Rosenberg L, Kaufman DW, Helmrich SP, Shapiro S. The risk of myocardial infarction after quitting smoking in men under 55 years of age. *N Engl J Med* 1985 Dec 12;313(24):1511–4.
36. Breuer-Katschinski BD, Armstrong D, Goebell H, Arnold R, Classen M, Fischer M, et al. Smoking as a risk factor for duodenal ulcer relapse. RUDER Study Group. *Z Gastroenterol* 1995 Sep;33(9):509–12.
37. Cosnes J, Carbonnel F, Carrat F, Beaugerie L, Cattan S, Gendre J. Effects of current and former cigarette smoking on the clinical course of Crohn's disease. *Aliment Pharmacol Ther* 1999 Nov;13(11):1403–11.
38. Frye RE, Schwartz BS, Doty RL. Dose-related effects of cigarette smoking on olfactory function. *JAMA* 1990 Mar 2;263(9):1233–6.
39. Johnson NW, Bain CA. Tobacco and oral disease. EU-Working Group on Tobacco and Oral Health. *Br Dent J* 2000 Aug 26;189(4):200–6.
40. Thomson WM, Broadbent JM, Welch D, Beck JD, Poulton R. Cigarette smoking and periodontal disease among 32-year-olds: a prospective study of a representative birth cohort. *J Clin Periodontol* 2007 Oct;34(10):828–34.

## Quick wins: the short-term benefits of stopping smoking

41. Ortiz A, Grando SA. Smoking and the skin. *Int J Dermatol* 2012 Mar;51(3):250–62.
42. Seitz C, Strack R, Wyrick D. Cigarette smoking and facial wrinkles: a review of the literature. *J Smok Cess* 2012;7:18–24.
43. Perkins KA, Parzynski C, Mercincavage M, Conklin CA, Fonte CA. Is self-efficacy for smoking abstinence a cause of, or a reflection on, smoking behavior change? *Exp Clin Psychopharmacol* 2012 Feb;20(1):56–62.
44. Kadden RM, Litt MD. The role of self-efficacy in the treatment of substance use disorders. *Addict Behav* 2011 Dec;36(12):1120–6.
45. Stuart K, Borland R, McMurray N. Self-efficacy, health locus of control, and smoking cessation. *Addict Behav* 1994 Jan;19(1):1–12.
46. Christakis NA, Fowler JH. The collective dynamics of smoking in a large social network. *N Engl J Med* 2008 May 22;358(21):2249–58.
47. Gerace TA, Hollis J, Ockene JK, Svendsen K. Smoking cessation and change in diastolic blood pressure, body weight, and plasma lipids. MRFIT Research Group. *Prev Med* 1991 Sep;20(5):602–20.
48. Osler M, Tjonneland A, Suntum M, Thomsen BL, Stripp C, Gronbaek M, et al. Does the association between smoking status and selected healthy foods depend on gender? A population-based study of 54 417 middle-aged Danes. *Eur J Clin Nutr* 2002 Jan;56(1):57–63.
49. Laaksonen M, Luoto R, Helakorpi S, Uutela A. Associations between health-related behaviors: a 7-year follow-up of adults. *Prev Med* 2002 Feb;34(2):162–70.
50. Rimer BK, Orleans CT, Keintz MK, Cristinzio S, Fleisher L. The older smoker. Status, challenges and opportunities for intervention. *Chest* 1990 Mar;97(3):547–53.
51. Nagaya T, Yoshida H, Takahashi H, Kawai M. Cigarette smoking weakens exercise habits in healthy men. *Nicotine Tob Res* 2007 Oct;9(10):1027–32.
52. Hughes JR. Effects of abstinence from tobacco: valid symptoms and time course. *Nicotine Tob Res* 2007 Mar;9(3):315–27.
53. Shahab L, West R. Differences in happiness between smokers, ex-smokers and never smokers: cross-sectional findings from a national household survey. *Drug Alcohol Depend* 2012 Feb 1;121(1–2):38–44.
54. Shahab L, West R. Do ex-smokers report feeling happier following cessation? Evidence from a cross-sectional survey. *Nicotine Tob Res* 2009 May;11(5):553–7.
55. West R, Hajek P. What happens to anxiety levels on giving up smoking? *Am J Psychiatry* 1997 Nov;154(11):1589–92.
56. McDermott MS, Marteau TM, Hollands GJ, Hankins M, Aveyard P. Change in anxiety following successful and unsuccessful attempts at smoking cessation: cohort study. *Br J Psychiatry* 2013 Jan;202:62–7.
57. Shahab L, Andrew S, West R. Changes in prevalence of depression and anxiety following smoking cessation: results from an international cohort study (ATTEMPT). *Psychol Med*. In press 2013.
58. Jamal M, Willem Van der Does AJ, Cuijpers P, Penninx BW. Association of smoking and nicotine dependence with severity and course of symptoms in patients with depressive or anxiety disorder. *Drug Alcohol Depend*. In press 2012.
59. Hausteine KO, Haffner S, Woodcock BG. A review of the pharmacological and psychopharmacological aspects of smoking and smoking cessation in psychiatric patients. *Int J Clin Pharmacol Ther* 2002 Sep;40(9):404–18.
60. Iringe-Koko B, McNeill A, Joossens L, West R, Brown J, Dockrell M, et al. Trends in purchase of illicit tobacco and price of cigarettes in England 2007/8–2010/11. *Tobacco Control*. In press 2013.
61. West R, Brown J. Smoking and Smoking Cessation in England 2011. [www.smokinginengland.info](http://www.smokinginengland.info) 2012
62. Office for National Statistics. Family Spending – 2012. [www.ons.gov.uk/ons/rel/family-spending/family-spending/family-spending-2012-edition/index.html](http://www.ons.gov.uk/ons/rel/family-spending/family-spending/family-spending-2012-edition/index.html) 2012

## Quick wins: the short-term benefits of stopping smoking

### NCSCT

The National Centre for Smoking Cessation and Training (NCSCT) was established to support the delivery of smoking cessation interventions provided by local stop smoking services, support the NHS and Local Authorities to deliver effective evidence-based tobacco control programmes, and deliver training and assessment programmes to stop smoking practitioners and other health care professionals.

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