Activated Charcoal

Activated Charcoal  
What is it?  
Activated charcoal has pores that can trap chemicals. It is typically taken by mouth as a treatment for some swallowed poisons. There is little evidence for other uses.  
  
Charcoal is made from peat, coal, wood, coconut shell, or petroleum. Activated charcoal is made by heating charcoal in the presence of a gas. This process causes the charcoal to develop lots of internal spaces or pores. These pores help activated charcoal trap chemicals.  
  
Activated charcoal is commonly used to treat poisoning. It is also used for high cholesterol, hangovers, and upset stomach, but there is no strong scientific evidence to support most of these uses.  
  
  
How effective is it?  
Natural Medicines Comprehensive Database rates effectiveness based on scientific evidence according to the following scale: Effective, Likely Effective, Possibly Effective, Possibly Ineffective, Likely Ineffective, Ineffective, and Insufficient Evidence to Rate.The effectiveness ratings for ACTIVATED CHARCOAL are as follows:Possibly effective for...Poisoning. Taking activated charcoal by mouth is useful for trapping drugs and other types of chemicals to stop poisoning. It should be used under the guidance of a healthcare provider along with standard treatments for poisoning.   
  
There is interest in using activated charcoal for a number of other purposes, but there isn't enough reliable information to say whether it might be helpful.  
  
  
Is it safe?  
When taken by mouth: Activated charcoal is likely safe when used short-term. Taking activated charcoal long-term is possibly safe. Common side effects include constipation and black stools.   
When applied to the skin: Activated charcoal is likely safe for most adults when applied to wounds.   
  
Special precautions & warnings:  
Pregnancy and breast-feeding: Activated charcoal is possibly safe when used short-term when pregnant or breast-feeding. Consult with your healthcare provider before using it.  
Gastrointestinal (GI) blockage or slow movement of food through the intestine: Don't use activated charcoal if you have any kind of intestinal blockage. Also, if you have a condition that slows the passage of food through the intestine, speak with a healthcare professional before using activated charcoal.  
  
  
Are there interactions with medications?  
ModerateBe cautious with this combination.Alcohol (Ethanol)Taking alcohol with activated charcoal might decrease how well activated charcoal works to prevent poison absorption.Birth control pills (Contraceptive drugs)Activated charcoal reduces absorption of substances in the stomach and intestines. Taking activated charcoal along with birth control pills can decrease how much of the birth control pills the body absorbs. This can decrease the effects of birth control pills. To prevent this interaction, take activated charcoal at least 3 hours after or 12 hours before birth control pills.Medications taken by mouth (Oral drugs)Activated charcoal reduces absorption of drugs and other chemicals in the stomach and intestines. Taking activated charcoal along with medications taken by mouth can decrease how much medicine the body absorbs. This can decrease the effects of your medication. To prevent this interaction, take activated charcoal at least one hour after medications you take by mouth.Syrup of ipecacActivated charcoal can bind syrup of ipecac in the stomach. This decreases the effects of syrup of ipecac.  
  
  
Are there interactions with herbs and supplements?  
There are no known interactions with herbs and supplements.  
  
  
Are there interactions with foods?  
Drinking alcohol might make activated charcoal less effective in trapping poisons and other chemicals. Also, keep in mind that activated charcoal can make it more difficult for the body to absorb micronutrients.  
  
  
How is it typically used?  
In foods, activated charcoal is increasingly used as a black food coloring.  
  
As medicine, activated charcoal has most often been used under the supervision of a healthcare professional in a single dose of 100 grams by mouth. It's also used in wound dressings. Speak with a healthcare provider to find out what type of product and dose might be best for a specific condition.  
  
  
  
Other names  
Activated Carbon, Animal Charcoal, Carbo Vegetabilis, Carbon, Carb n Activado, Charbon Actif, Charbon Activ , Charbon Animal, Charbon M dicinal, Charbon V g tal, Charbon V g tal Activ , Charcoal, Gas Black, Lamp Black, Medicinal Charcoal, Noir de Gaz, Noir de Lampe, Vegetable Carbon, Vegetable Charcoal.  
  
  
Methodology  
  
 To learn more about how this article was written, please see the Natural Medicines Comprehensive Database methodology.   
   
  
  
References  
Butera A, Pascadopoli M, Gallo S, et al. Evaluation of the Efficacy of Low-Particle-Size Toothpastes against Extrinsic Pigmentations: A Randomized Controlled Clinical Trial. Dent J (Basel) 2023;11:82. View abstract.  
Espinoza B, Zingale D, Rubal-Peace G. Prevalence of medically unsupervised activated charcoal use a cause for concern in celiac disease?. J Am Pharm Assoc 2022;62:546-550. View abstract.  
Ali R, Irfan M, Akram U, et al. Efficacy of Natural Formulation Containing Activated Charcoal, Calcium Sennosides, Peppermint Oil, Fennel Oil, Rhubarb Extract, and Purified Sulfur (Nucarb ) in Relieving Constipation. Cureus 2021;13:e18419. View abstract.  
Isoardi KZ, Henry C, Harris K, Isbister GK. Activated Charcoal and Bicarbonate for Aspirin Toxicity: a Retrospective Series. J Med Toxicol 2022;18:30-37. View abstract.  
Roberts MS, Magnusson BM, Burczynski FJ, Weiss M. Enterohepatic circulation: physiological, pharmacokinetic, and clinical implications. Clin Pharmacokinet 2002;41:751-90. View abstract.  
Ibarra M, Troconiz IF, Fagiolino P. Enteric reabsorption processes and their impact on drug pharmacokinetics. Sci Rep 2021;Mar 11;11:5794. View abstract.  
Gao Y, Shao J, Jiang Z, et al. Drug enterohepatic circulation and disposition: constituents of systems pharmacokinetics. Drug Discov Today 2014;19:326-40. View abstract.  
Skov K, Graudal NA, J rgens G. The effect of activated charcoal on drug exposure following intravenous administration: A meta-analysis. Basic Clin Pharmacol Toxicol 2021;128:568-578. View abstract.  
Gao Y, Wang G, Li Y, Lv C, Wang Z. Effects of oral activated charcoal on hyperphosphatemia and vascular calcification in Chinese patients with stage 3-4 chronic kidney disease. J Nephrol. 2019;32:265-72. View abstract.  
Elomaa K, Ranta S, Tuominen J, L hteenm ki P. Charcoal treatment and risk of escape ovulation in oral contraceptive users. Hum Reprod. 2001;16:76-81. View abstract.  
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Chiew AL, Gluud C, Brok J, Buckley NA. Interventions for paracetamol (acetaminophen) overdose. Cochrane Database Syst Rev 2018;2:CD003328. View abstract.  
Kerihuel JC. Charcoal combined with silver for the treatment of chronic wounds. Wounds UK 2009;5:87-93.  
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Wang Z, Cui M, Tang L, et al. Oral activated charcoal suppresses hyperphosphataemia in haemodialysis patients. Nephrology (Carlton) 2012;17:616-20. View abstract.  
Wananukul W, Klaikleun S, Sriapha C, Tongpoo A. Effect of activated charcoal in reducing paracetamol absorption at supra-therapeutic dose. J Med Assoc Thai 2010;93:1145-9. View abstract.  
Skinner CG, Chang AS, Matthews AS, Reedy SJ, Morgan BW. Randomized controlled study on the use of multiple-dose activated charcoal in patients with supratherapeutic phenytoin levels. Clin Toxicol (Phila) 2012;50:764-9. View abstract.  
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Roberts DM, Southcott E, Potter JM, et al. Pharmacokinetics of digoxin cross-reacting substances in patients with acute yellow oleander (Thevetia peruviana) poisoning, including the effect of activated charcoal. Ther Drug Monit 2006;28:784-92. View abstract.  
Mullins M, Froelke BR, Rivera MR. Effect of delayed activated charcoal on acetaminophen concentration after simulated overdose of oxycodone and acetaminophen. Clin Toxicol (Phila) 2009;47:112-5. View abstract.  
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Coffin B, Bortolloti C, Bourgeouis O, Denicourt L. Efficacy of a simethicone, activated charcoal and magnesium oxide combination (Carbosymag) in functional dyspepsia: results of a general practice-based randomized trial. Clin Res Hepatol Gastroenterol 2011;35(6-7):494-9.View abstract.  
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Methodology  
  
 To learn more about how this article was written, please see the Natural Medicines Comprehensive Database methodology.   
   
  
  
References  
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Gao Y, Shao J, Jiang Z, et al. Drug enterohepatic circulation and disposition: constituents of systems pharmacokinetics. Drug Discov Today 2014;19:326-40. View abstract.  
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Skinner CG, Chang AS, Matthews AS, Reedy SJ, Morgan BW. Randomized controlled study on the use of multiple-dose activated charcoal in patients with supratherapeutic phenytoin levels. Clin Toxicol (Phila) 2012;50:764-9. View abstract.  
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Roberts DM, Southcott E, Potter JM, et al. Pharmacokinetics of digoxin cross-reacting substances in patients with acute yellow oleander (Thevetia peruviana) poisoning, including the effect of activated charcoal. Ther Drug Monit 2006;28:784-92. View abstract.  
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Kerihuel JC. Effect of activated charcoal dressings on healing outcomes of chronic wounds. J Wound Care. 2010;19:208,210-2,214-5. View abstract.  
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Eddleston M, Juszczak E, Buckley NA, et al. Multiple-dose activated charcoal in acute self-poisoning: a randomised controlled trial. Lancet 2008;371:579-87. View abstract.  
Cooper GM, Le Couteur DG, Richardson D, Buckley NA. A randomized clinical trial of activated charcoal for the routine management of oral drug overdose. QJM 2005;98:655-60. View abstract.  
Coffin B, Bortolloti C, Bourgeouis O, Denicourt L. Efficacy of a simethicone, activated charcoal and magnesium oxide combination (Carbosymag) in functional dyspepsia: results of a general practice-based randomized trial. Clin Res Hepatol Gastroenterol 2011;35(6-7):494-9.View abstract.  
Brahmi N, Kouraichi N, Thabet H, Amamou M. Influence of activated charcoal on the pharmacokinetics and the clinical features of carbamazepine poisoning. Am J Emerg Med 2006;24:440-3. View abstract.  
Hoegberg LC, Angelo HR, Christophersen AB, Christensen HR. Effect of ethanol and pH on the adsorption of acetaminophen (paracetamol) to high surface activated charcoal, in vitro studies. J Toxicol Clin Toxicol 2002;40:59-67. View abstract.  
Hoekstra JB, Erkelens DW. No effect of activated charcoal on hyperlipidaemia. A double-blind prospective trial. Neth J Med 1988;33:209-16.  
Park GD, Spector R, Kitt TM. Superactivated charcoal versus cholestyramine for cholesterol lowering: a randomized cross-over trial. J Clin Pharmacol 1988;28:416-9. View abstract.  
Neuvonen PJ, Kuusisto P, Vapaatalo H, Manninen V. Activated charcoal in the treatment of hypercholesterolaemia: dose-response relationships and comparison with cholestyramine. Eur J Clin Pharmacol 1989;37:225-30. View abstract.  
Suarez FL, Furne J, Springfield J, Levitt MD. Failure of activated charcoal to reduce the release of gases produced by the colonic flora. Am J Gastroenterol 1999;94:208-12. View abstract.  
Hall RG Jr, Thompson H, Strother A. Effects of orally administered activated charcoal on intestinal gas. Am J Gastroenterol 1981;75:192-6. View abstract.  
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Bond GR. The role of activated charcoal and gastric emptying in gastrointestinal decontamination: a state-of-the-art review. Ann Emerg Med 2002;39:273-86. View abstract.  
Anon. Position statement and practice guidelines on the use of multi-dose activated charcoal in the treatment of acute poisoning. American Academy of Clinical Toxicology; European Association of Poisons Centres and Clinical Toxicologists. J Toxicol Clin Toxicol 1999;37:731-51. View abstract.  
Kaaja RJ, Kontula KK, Raiha A, Laatikainen T. Treatment of cholestasis of pregnancy with peroral activated charcoal. A preliminary study. Scand J Gastroenterol 1994;29:178-81. View abstract.  
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