

## Can Thorough Cleaning of Endoscopes Prevent Transmission of Hepatitis C Virus Infection?

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The full report is titled “Digestive Endoscopy Is Not a Major Risk Factor for Transmitting Hepatitis C Virus.” It is in the 7 June 2005 issue of *Annals of Internal Medicine* (volume 142, pages 903-909). The authors are A. Ciancio, P. Manzini, F. Castagno, S. D’Antico, P. Reynaudo, L. Coucourde, G. Ciccone, M. Del Piano, M. Ballarè, S. Peyre, R. Rizzi, C. Barletti, M. Bruno, S. Caronna, P. Carucci, W. De Bernardi Venon, C. De Angelis, A. Morgando, A. Musso, A. Repici, M. Rizzetto, and G. Saracco.

### What is the problem and what is known about it so far?

Endoscopy is a method of examining the inside of a patient’s digestive tract. It involves inserting a flexible, illuminated tube (an endoscope) through the mouth or anus, allowing the doctor to examine, biopsy, and sometimes treat diseases of the digestive tract. Endoscopy often produces a small amount of bleeding, particularly if biopsies are performed.

Hepatitis C is a common, serious, and persistent viral infection of the liver. The virus is carried in the bloodstream and can be transmitted to another person by contact with the infected blood. For this and other reasons, endoscopes must be thoroughly cleaned between uses in order to prevent transmission of hepatitis C virus (HCV) from one patient to another. There are standard, well-accepted procedures for performing this cleaning process. Even so, many doctors worry that contact with an endoscope that has previously been used on an HCV-infected patient may pose a significant risk.

### Why did the researchers do this particular study?

To assess the risk posed by endoscopy with regard to transmission of HCV.

### Who was studied?

The authors studied 9188 patients who were not infected with HCV at the beginning of the study and who underwent endoscopy. Of these patients, approximately 62% had biopsies and presumably bled. To assess the relative risk, the authors compared patients who had endoscopy with 51,645 initially uninfected blood donors who had not undergone endoscopy.

### How was the study done?

All patients who had had endoscopy at 3 hospitals over a 3-year period were evaluated. While only those who were not infected at the time of endoscopy were included in the study, 912 patients with known HCV infection underwent endoscopy using the same endoscopes on the same days as the uninfected patients. About one quarter of the biopsies were performed with reusable forceps, while in three quarters the forceps were disposable and were used only once. The instruments were washed and disinfected in the recommended manner between each use. Six months after endoscopy was performed, 92% of the patients were retested to see whether they had become infected with HCV. Seventy-five percent of the initially uninfected blood donors were also retested an average of 2.5 years after donation.

### What did the researchers find?

None of the initially uninfected patients who underwent endoscopy had acquired HCV infection at the time of follow-up. It made no difference whether biopsies were performed or whether disposable or reusable forceps had been used. On the other hand, 4 of the initially uninfected blood donors (none of whom had undergone endoscopy) did become infected by the time of follow-up.

### What are the limitations of the study?

Approximately 8% of the patients who underwent endoscopy did not have follow-up testing to see whether they had become infected.

### What are the implications of the study?

When proper cleaning techniques are used, there is no indication that endoscopy carries a significant risk for transmitting HCV, even when instruments have previously been used on infected patients.

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