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***[Particulate contamination of infusion solutions and drug additives within the scope of long-term intensive therapy. 1. Energy dispersion electron images in the scanning electron microscope-REM/EDX – (Article in German) ]***

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During use of i.v. solutions, particulate matter may be introduced into the patient. X-ray analyses have shown that the particulate matter consists mainly of glass from ampules, rubber from stoppers of infusion bottles, and plastic from infusion sets. A new method is introduced: scanning electron microscopy-SEM- in combination with energy-dispersive X-ray analysis-EDX. using this technique all foreign particles larger than 0.8 microns can be detected and analyzed in any tissue. Especially in critically ill patients, particularly matter is deposited in the microcirculation of the lung. The particles cause a variety of pathologic changes (formation of thrombi, thromboembolization of the microcirculation, destruction of the vascular endothelium, formation of granulomas and foreign body giant cells). The adult respiratory distress syndrome could be produced or respiratory insufficiency might be aggravated following circulatory shock. It is therefore recommended that terminal in-line filters with small pore sizes be used for all i.v. solutions