by specific environmental conditions. Thus, in the conversion of fibrinogen to fibrin, it seems likely that the loss of highly charged fibrinopeptides (*4*) alters the interaction properties of the building units without causing profound changes in internal structure.

Preliminary observations indicate that fibrin stained with uranyl acetate (*5*) shows a density distribution in the electron microscope similar to that reported here for stained fibrinogen tactoids (*6*).

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Elastic Membrane: Effect of Increasing Tension on the Absorptive Capacity

Arterial walls contain a large proportion of elastin, a tissue polymer with long-range elasticity similar to that of rubber. In arterial hypertension the arterial walls are under constantly elevated tension. In atherosclerosis, a disease considered to be enhanced by arterial hypertension (*1*), adsorption of blood lipids to and into the arterial wall is thought to be an important pathogenic factor (*2*). Moreover, it has been shown, in electron-microscopic studies, that one of the earliest steps in the pathogenesis of experimental atherosclerosis is the inhibition of lipid by the internal elastic lamina (*3*). Therefore it seems reasonable that enhancing of adsorptive capacity of the internal elastic lamina may be one of the means by which hypertension predisposes to atherosclerosis.

Before exploring this idea, it would be desirable to know whether increasing the tension of elastic substances in general would increase their ability to adsorb molecules from solution. Experiments were conducted with models of heavy latex rubber dam (*4*) to simulate the elastic adsorbent membrane; Evans blue was used for the substance to be adsorbed.

A 0.3 percent solution of Evans blue in McIlvaine's buffer with *p*H of 4.8 was prepared. Pyrex test tubes with lips having an outside diameter of 2.8 cm and with their closed ends cut out were used as receptacles for the dye solution. Circles with diameters of 2.2, 2.4, 2.6, and 2.8 cm were traced in black on sheets of heavy latex-rubber dam with a ball-point pen. Each sheet, with the drawn circle on the outer surface, was stretched over the lipped end of the test tube so that the inked line of the circle coincided with the outer border of the lip, and was fixed in position by rubber bands wound tightly around the dam and the tube just below the lip. After the dam had been stretched and fixed to the tube, the traced circle was always 2.8 cm in diameter. Therefore the ratios of the stretched to the unstretched diameters of the various sized circles were: 2.8/2.8, 2.8/2.6, 2.8/2.4, and 2.8/2.2. Two milliliters of dye solution was added to each tube covered by dam and left there for 6 hours. The inside of the tube and the inner latex surface were rinsed thoroughly with distilled water and 3 ml of distilled water was left in each tube for 15 minutes. After the water was completely drained from the tube, the dye adherent to the dam was eluted by leaving 3 ml of 1 percent aqueous solution of sodium carbonate in the tube for exactly 1 hour. The eluate was then poured into a cuvette and its optical density read at 580 mμ. The optical density was converted to micrograms of dye by a regression equation obtained by plotting the optical densities of several dye solutions of known and varying concentration. The data were expressed as micrograms of dye per square centimeter of stretched membrane for each "area-stretch" ratio (the area of the stretched circle on the membrane divided by the area of circle before stretching).

There was significant increase in adsorptive capacity ($p < .01$) by the stretched membrane with increasing tension up to an area-stretch ratio of 1.36 (Table 1). Also, up to this point the increase was found by semilogarithmic plot to be exponential ($y = 3.67e^{.577}$). Beyond a stretch ratio of 1.36 increase in adsorptive capacity of the stretched membrane ceased. Although the shape of the experimental curve plotted from the data in the table seems to suggest an equilibrium, it is not clear whether this phenomenon involves equilibria or rates of adsorption and diffusion in the membrane.

Table 1. Effect of increasing tension on the capacity of latex rubber dam to adsorb Evans blue.

Area stretch ratio	Trials (No.)	Mean quantity of dye adsorbed by stretched dam (μg/cm^2)	Standard error
1.00	14	5.22	.10
1.16	17	6.42	.08
1.36	18	8.32	.05
1.62	16	8.58	.14

The reason for the increase of adsorptive capacity of the rubber membrane with increasing tension may possibly be found in the explanation of the phenomenon of elasticity of rubber-like substances (*5*).

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Renal Tubular Localization of Chlormerodrin Labeled with Mercury-203 by Autoradiography

Abstract. *An autoradiographic technique has been developed for determining the intrarenal distribution of therapeutic doses of chlormerodrin labeled with mercury-203. Highest concentrations of mercury were detected in the straight portion of the proximal tubule in the rat and in the convoluted portion of the proximal tubule in the dog.*

It is generally accepted that mercurial diuretics act by inhibiting renal reabsorption of sodium and water, although the mechanisms of action and tubular site at which this effect occurs remain controversial. Conventional studies of renal function and histochemical methods have failed to resolve these questions (*1, 2*). If it is assumed