induced reduction in electrolyte excretion in the dog was not related to changes in glomerular filtration or renal plasma flow(6), the estrogen effect is probably not mediated by changes in renal hemodynamics. The fact that both the estrogen treated and pair-fed animals had the same serum electrolyte levels, coupled with the fact that estrogen did not alter filtration rate in the ovariectomized animal, would imply that the filtered load might be the same. While an altered tubular reabsorption in the estrogen treated animal is suggested, the effect of estrogen on filtered load and reabsorption in the adrenalectomized rat remains to be determined.

Summary. Daily administration of 10, 25, 50 or 100 μg of diethylstilbestrol (DES) to overiectomized-adrenalectomized rats for 7 days significantly reduced the Na^+, Cl^- and K^+ excretions and the urinary Na:K ratio. Pair-feeding (to the 100 μg DES group) also reduced the electrolyte excretions, though significantly less than that of the 100 μg DES treated animals, but did not alter the urinary Na:K ratio which remained normal. Thus, at these dosages, DES can effect a diminished electrolyte excretion in the absence of adrenal cortical tissue and independently of electrolyte intake.

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Influence of Genotype on Muscle Regeneration in Mice. (29738)

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Skeletal muscle is one of the regenerative tissues in mammals(1-4). In the past few years, in particular, a body of evidence has emerged from several independent laboratories indicating that the primary events are essentially the same as those that operate in differentiation of muscle of the embryo(2-4). It seemed quite possible that the amount of regeneration in a muscle would show a relationship to pedigree. The specific objective of this work was to find out if genetically different strains of mice would exhibit different levels of regeneration.

Materials and methods. Experiments were performed with male Jackson Memorial Laboratory mice approximately 3 months of age, from one of the following strains: $B6AF_1$, SJL/J, C57BL/6J and A/J(5). Strains C57BL/6J and A/J are purebreds. Strain $B6AF_1$ is a hybrid from matings between C57BL/6J females and A/J males. Strain SJL/J is an independent line of Swiss Webster mouse. At time of experimentation animals weighed 23-25 g.

Mice were anesthetized lightly with methoxyflurane and 1 mm $\times$ 1 mm transections

TABLE I. Regeneration in Muscle from Mice of Different Genotypes as Judged by the Ratio of Regenerating to Injured Fibers.

Strain	Mean ratio	Standard deviation ±
$B6AF_1$	1.29	.69
SJL/J	2.10	1.23
C57BL/6J	2.01	1.40
A/J	.645	.39

Counts were made in 10 or more randomly selected sections of 3 or more animals.

made in their left *tibialis anterior* muscles. Wounds were inflicted between 9:35 and 10:35 a.m. Regeneration was allowed to proceed for 5 days (± 15 minutes) at which time animals were killed and wound areas excised and fixed in Bouin's fluid. Serial sections were cut tangential to the superficial surface of the muscle and were stained with hematoxylin-eosin.

Results. Histological examination of serial sections through wounds revealed large numbers of differentiating muscle fibers in virtually all sections from animals of strains $B6AF_1$, C57BL/6J and SJL/J. In the wounds of the A/J series, regeneration while evident was appreciably reduced as compared with other strains. However, the newly developing fibers in the A/J series were, individually, typical for this post-operative time.

Counts were made of regenerating muscle fibers from 10 or more randomly selected sections of at least 3 specimens in each strain. The values, expressed as a ratio of new fibers to injured, are summarized in Table I. Swiss mice (SJL/J) showed the best regeneration of the 4 strains tested. Strains C57BL/6J and A/J exhibited, respectively, 2.01 and 0.645 regenerating muscle fibers per injured one. Values for hybrids of the latter strains ($B6AF_1$) averaged 1.29. Interestingly, this figure is very close to the mean between parental type values (1.32).

Discussion. As predicted in the introduction, there are pedigree-related differences among strains of animals with respect to regeneration of skeletal muscle. The capacity to regenerate muscle is much less in the A/J strain than in animals of the other strains tested, to the extent that differences were evident even without counting fibers. Strains of mice were selected *ad hoc*. Luckily, a hybrid was chosen with parental genotypes, one of which is excellent in regeneration of muscle and the other, relatively poor. That the hybrid showed levels of regeneration intermediate between the 2 parental types indicates that the amount of new muscle produced is governed by multiple, complimentary alleles.

Aside from theoretical considerations, the data indicate the importance of pedigree selection in experiments involving muscle regeneration where the mouse is to be the organism of study.

Summary. Regeneration was studied in muscles of mice of 4 genetic types. It was learned that the number of new muscle fibers differed with varying genotype. A hybrid strain exhibited regeneration at levels intermediate between those observed among muscles of the parent type.

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