<u>Video</u> : Working with a Small Training Set.

· Medical image datasets typically have 10 thousand to 100 thousand examples

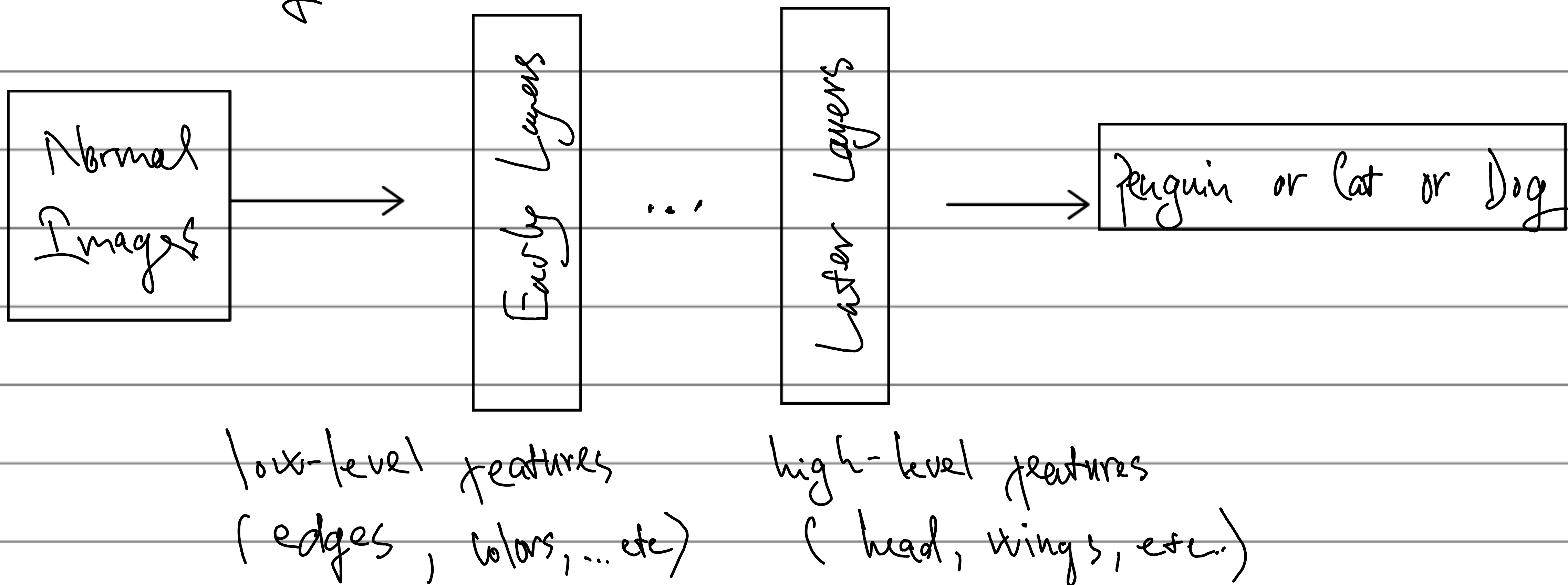| Millions of images with labels	~10k or 100k Images with labels
<u>Normal Images</u>	<u>Medical Images</u>

1. Pretraining

<u>PRETRAIN</u>

Normal Images → Early Layers … Later Layers → Penguin or Cat or Dog

low-level features
(edges, colors, ... etc)

high-level features
(head, wings, etc.)

2. Finetune

<u>FINETUNE</u>

Medical Image → Early Layers … Later Layers → Mass or no Mass / Pneumonia or No / Edema or No
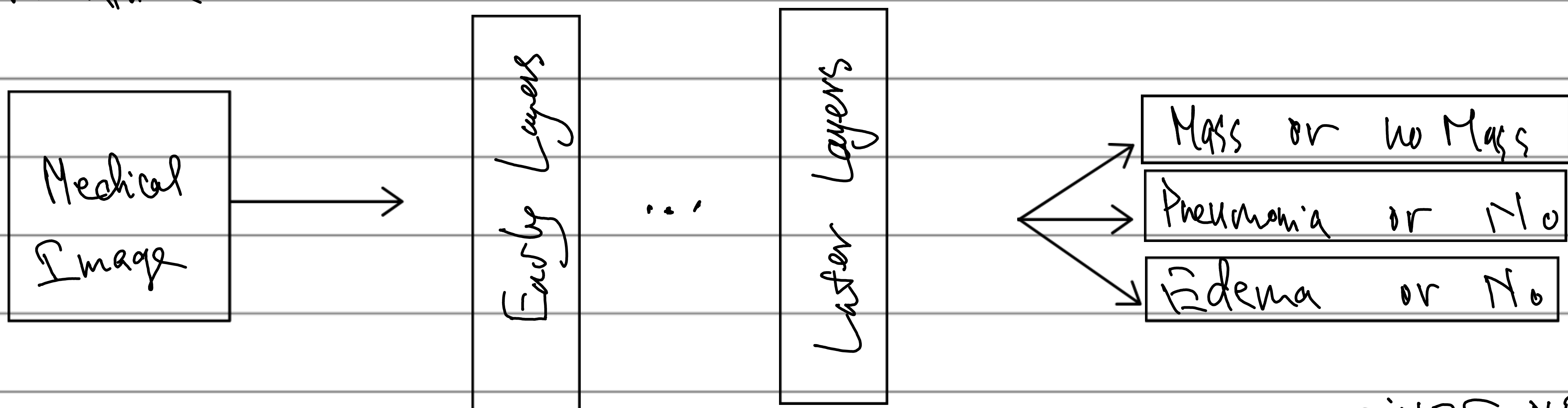
<u>PRETRAIN</u> + <u>FINETUNE</u>

(all)   Option 1   Update   Update   = TRANSFER LEARNING

(last layer) Option 2   Not Update   Update