

FDA and ISMP Lists of Look-Alike Drug Names with Recommended Tall Man Letters

The look-alike drug names in the Tables that follow have been modified using tall man (mixed case) letters to help draw attention to the dissimilarities in their names. Several studies have shown that highlighting sections of drug names using tall man letters can help distinguish similar drug names,¹ making them less prone to mix-ups.^{2,3} ISMP, FDA, The Joint Commission, and other safety-conscious organizations have promoted the use of tall man letters as one means of reducing confusion between similar drug names.

Table 1 provides an alphabetized list of FDA-approved established drug names with recommended tall man letters, which were first identified during the FDA Name Differentiation Project (www.fda.gov/Drugs/DrugSafety/MedicationErrors/ucm164587.htm).

Table 2 provides an alphabetized list of additional drug names with recommendations from ISMP regarding the use and placement of tall man letters. This is not an official list approved by FDA. It is intended for voluntary use by healthcare practitioners and drug information vendors. Any product label changes by manufacturers require FDA approval.

One of the difficulties with the use of tall man letters includes inconsistent application in health settings and lack of standardization regarding which letters to present in uppercase. A new study by Gerrett⁴ describes several ways to determine which of the dissimilar letters in each drug name should be highlighted. To promote standardi-

zation, ISMP followed one of these tested methodologies whenever possible. Called the CD3 rule, the methodology suggests working from the left of the word first by capitalizing all the characters to the right once two or more dissimilar letters are encountered, and then, working from the right of the word back, returning two or more letters common to both words to lowercase letters. When the rule cannot be applied because there are no common letters on the right side of the word, the methodology suggests capitalizing the central part of the word only. ISMP suggests that the tall man lettering scheme provided in Tables 1 and 2 be followed when presenting these drug names to healthcare providers to promote consistency. At this time, scientific studies do not support the use of tall man letters when presenting drug names to patients.

References: 1) Filik R, Purdy K, Gale A, Gerrett D. Drug name confusion: evaluating the effectiveness of capital (“Tall Man”) letters using eye movement data. *Social Science & Medicine* 2004;59(12):2597-2601. 2) Filik R, Purdy K, Gale A, Gerrett D. Labeling of medicines and patient safety: evaluating methods of reducing drug name confusion. *Human Factors* 2006;48(1):39-47. 3) Grasha A. Cognitive systems perspective on human performance in the pharmacy: implications for accuracy, effectiveness, and job satisfaction. Alexandria (VA): NACDS; 2000 Report No. 062100. 4) Gerrett D, Gale AG, Darker IT, Filik R, Purdy KJ. Tall man lettering. Final report of the use of tall man lettering to minimize selection errors of medicine names in computer prescribing and dispensing systems. Loughborough University Enterprises Ltd.; 2009 (www.connectingforhealth.nhs.uk/systemsandservices/eprescribing/refdocs/tallman.pdf).

Table 1. FDA-Approved List of Generic Drug Names with Tall Man Letters	
Drug Name with Tall Man Letters	Confused with
aceta Z LAMIDE	aceto H EXAMIDE
aceto H EXAMIDE	aceta Z LAMIDE
bu P ROPion	bus P IRone
bus P IRone	bu P ROPion
chlorpro M AZINE	chlorpro P AMIDE
chlorpro P AMIDE	chlorpro M AZINE
clomi P HENE	clomi P RAMINE
clomi P RAMINE	clomi P HENE
cyclo S ERINE	cyclo S PORINE
cyclo S PORINE	cyclo S ERINE
D AUNOrubicin	D OXOrubicin
dimenhy D RINATE	diphenhydr A MINE
diphenhydr A MINE	dimenhy D RINATE
D OBUTamine	D OPamine
D OPamine	D OBUTamine

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**FDA and ISMP Lists of
Look-Alike Drug Names with Recommended Tall Man Letters (continued)**

Table 1. FDA-Approved List of Generic Drug Names with Tall Man Letters (continued)

Drug Name with Tall Man Letters	Confused with
DOXO rubicin	DAUNO rubicin
gli piZ IDE	gly BUR IDE
gly BUR IDE	gli piZ IDE
hydr ALAZ INE	hydr OXY zine
hydr OXY zine	hydr ALAZ INE
medroxy PROGESTER one	methyl PREDNIS olone - methyl TESTOSTER one
methyl PREDNIS olone	medroxy PROGESTER one - methyl TESTOSTER one
methyl TESTOSTER one	medroxy PROGESTER one - methyl PREDNIS olone
ni CARD ipine	NIF edipine
NIF edipine	ni CARD ipine
predniso LONE	predni SONE
predni SONE	predniso LONE
sulf ADIAZ INE	sulf SOXAZ OLE
sulf SOXAZ OLE	sulf ADIAZ INE
TOLAZ amide	TOLBUT amide
TOLBUT amide	TOLAZ amide
vin BLAS tine	vin CRIS tine
vin CRIS tine	vin BLAS tine

Table 2. ISMP List of Additional Drug Names with Tall Man Letters

Drug Name with Tall Man Letters	Confused with
ALPRAZ olam	LOR azepam
a MIL oride	am LODIP ine
am LODIP ine	a MIL oride
ARIP iprazole	RABE prazole
AVIN za*	INV anz*
aza CITID ine	aza THIO prine
aza THIO prine	aza CITID ine
car BAM azepine	OX carbazepine
CARBO platin	CIS platin
ce FAZ olin	cefo TE tan - cef OX itin - cef TAZ idime - cef TRIA Xone
cefo TE tan	ce FAZ olin - cef OX itin - cef TAZ idime - cef TRIA Xone
cef OX itin	ce FAZ olin - cefo TE tan - cef TAZ idime - cef TRIA Xone
cef TAZ idime	ce FAZ olin - cefo TE tan - cef OX itin - cef TRIA Xone
cef TRIA Xone	ce FAZ olin - cefo TE tan - cef OX itin - cef TAZ idime
Cele BREX *	Cele XA *
Cele XA *	Cele BREX *
chlordiaze POXIDE	chlorpro MAZINE
chlorpro MAZINE	chlordiaze POXIDE
CIS platin	CARBO platin
clonaze PAM	clo NID ine - clo ZAP ine - LOR azepam

* Brand names always start with an uppercase letter. Some brand names incorporate tall man letters in initial characters and may not be readily recognized as brand names. An asterisk follows all brand names in Table 2.

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**FDA and ISMP Lists of
Look-Alike Drug Names with Recommended Tall Man Letters (continued)**

Drug Name with Tall Man Letters	Confused with
cloNIDine	clonazePAM – cloZAPine – KlonoPIN*
cloZAPine	clonazePAM – cloNIDine
DACTIN omycin	DAPTO mycin
DAPTO mycin	DACTIN omycin
DOC etaxel	PACL itaxel
DOXO rubicin	IDA rubicin
DU Loxetine	FLU oxetine – PAR oxetine
e PHED rine	EPINEPH rine
EPINEPH rine	e PHED rine
fenta NYL	SUF entanil
flavox ATE	fluvoxa MINE
FLU oxetine	DUL oxetine – PAR oxetine
flu PHENAZ ine	fluvoxa MINE
fluvoxa MINE	flu PHENAZ ine – flavox ATE
gua FEN esin	guan FAC INE
guan FAC INE	gua FEN esin
Huma LOG *	Humu LIN *
Humu LIN *	Huma LOG *
HYDRO codone	oxy CODONE
HYDRO morphine	morphine
IDA rubicin	DOXO rubicin
in FLIX imab	ri TUX imab
INV anz*	AVIN za*
ISO tretinoin	tretinoin
Klono PIN *	clo NID ine
La MIC tal*	Lam ISIL *
Lam ISIL *	La MIC tal*
lami VUD ine	lamo TRIG ine
lamo TRIG ine	lami VUD ine
lev ETIR acetam	lev OCARN itine
lev OCARN itine	lev ETIR acetam
LOR azepam	ALPRAZ olam – clonaze PAM
met FORMIN	metro NIDAZOLE
metro NIDAZOLE	met FORMIN
mito MYC in	mito XAN trone
mito XAN trone	mito MYC in
Nex AVAR *	Nex IUM *
Nex IUM *	Nex AVAR *
ni CARD ipine	ni MOD ipine – ni FED ipine
NIFED ipine	ni MOD ipine – ni CARD ipine
ni MOD ipine	NIFED ipine – ni CARD ipine
Novo LIN *	Novo LOG *

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**FDA and ISMP Lists of
Look-Alike Drug Names with Recommended Tall Man Letters (continued)**

Table 2. ISMP List of Additional Drug Names with Tall Man Letters (continued)

Drug Name with Tall Man Letters	Confused with
NovoLOG*	NovoLIN*
OLAN Zapine	QUE tiapine
OX carbazepine	car BAM azepine
oxy CODONE	HYDRO codone – Oxy CONTIN *
Oxy CONTIN *	oxy CODONE
PACL itaxel	DOCE taxel
PAR oxetine	FLU oxetine – DUL oxetine
PEME trexed	PRAL atrexate
PENT obarbital	PHEN obarbital
PHEN obarbital	PENT obarbital
PRAL atrexate	PEME trexed
Pri LOSEC *	PRO zac*
PRO zac*	Pri LOSEC *
QUE tiapine	OLAN Zapine
qui NID ine	qui NINE
qui NINE	qui NID ine
RABE prazole	ARIP iprazole
Risper DAL *	rOPIN IRole
risperi DONE	rOPIN IRole
ri TUX imab	in FLIX imab
romi DEP sin	romi PLOS tim
romi PLOS tim	romi DEP sin
rOPIN IRole	Risper DAL * – risperi DONE
Sand IMMUNE *	Sando STATIN *
Sando STATIN *	Sand IMMUNE *
SERO quel*	SINE quan*
SINE quan*	SERO quel*
sita GLIP tin	SUM atriptan
Solu- CORTEF *	Solu- MEDROL *
Solu- MEDROL *	Solu- CORTEF *
SORA fenib	SUN Itinib
SUF entanil	fenta NYL
sulfa ADIAZINE	sulfa SALAZINE
sulfa SALAZINE	sulfa ADIAZINE
SUM atriptan	sita GLIP tin – ZOLM itriptan
SUN Itinib	SORA fenib
TEG retol*	TREN tal*
tia GAB ine	ti ZAN idine
ti ZAN idine	tia GAB ine
tra MAD ol	tra ZOD one
tra ZOD one	tra MAD ol

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**FDA and ISMP Lists of
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Table 2. ISMP List of Additional Drug Names with Tall Man Letters (continued)

Drug Name with Tall Man Letters	Confused with
TRENTal*	TEGretol*
valACYclovir	valGANciclovir
valGANciclovir	valACYclovir
ZOLMitriptan	SUMatriptan
ZyPREXA*	ZyrTEC*
ZyrTEC*	ZyPREXA*

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